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NAVMED P-5088

C O N T E N T S

FROM THE CHIEF 2

FEATURE ARTICLES

- Navy Hospital Corpsmen: The Backbone of the
Medical Department 5
- The Ideas of a Corpsman 9
- A Report on the Design and Development of the
LHA-1 Class General Purpose Amphibious
Assault Ship Medical/Dental Spaces 13
- Sit-Down and Four-Handed 20
- LPH Medical Department: Problems and
Valuable Experience 23

COMING AND GOING 10

PROFESSIONAL PAPERS

- Shipboard Cockroach Control: New Develop-
ments and Techniques 28
- The Gastroenterologists' Corner – The Esophagitis
–Hiatus Hernia– Esophageal Stricture Complex . 30
- The Hematologists' Corner – Disorders of the
Blood Platelet: A Classification 34

ABSTRACTS AND REVIEWS 41

NOTES AND ANNOUNCEMENTS

- Service Colleges 43

NOTES AND ANNOUNCEMENTS (Con.)

- Physicians' Assistant Training for Hospital
Corpsmen 44
- Residency Training Positions Available 45
- Formulary Notes 45
- Official Instructions and Directives 46
- American Board Certifications 47
- Awards and Honors 48
- DoD Implementation of the Drug Efficacy
Study 49
- Inclusion of Medical Officer Specialty Designa-
tion in BUPERS Orders 49
- Airlines Need Standby Form 50
- VA Rehabilitation for the Blind 50
- DoD Abortion Policy Revised 50
- You Can Finally Get Through! 51
- Honors to CAPT Bond, MC, USN 51
- Honors to CDR Scrimshaw, MSC, USN 52
- AMA Section Council on Military Medicine . . . 53
- Computerized Shots "Unforgettable" 53
- Certification of Sanitarians 53
- LCDR's Robertson and MacLean Score First's . . 53
- Now Staff – Former Student 54
- In Memory of Hospital Corpsman Wilhelm . . . 55
- In Memoriam 56
- Rambur Hall Dedication 58
- Meritorious Unit Commendation 60

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Front Cover photograph of HM1 C.A. Jimerfield, USN was taken in June 1970 at Dong Tam, Vietnam, where he served as Medical Advisor, Naval Advisory Group, Amphibious Task Force 211. We think the picture represents the Navy Hospital Corps rather well on its 73rd Birthday. This issue is dedicated to the magnificent Navy Hospital Corpsmen of the past, present and future.

Page 2. VADM George M. Davis, MC, USN, Surgeon General, presented the Navy Achievement Medal to HMC R.W. Davenport, USN, for his distinguished service in Vietnam. (Courtesy of PAO, BUMED)

We are grateful for the continued support in graphic arts ably provided by Mrs. J.L. Bottazzi, Code 4542, BUMED.

Unfortunately, the supply of U.S. NAVY MEDICINE publications is limited. No Hospital Corpsmen, and only a limited number of Nurse Corps officers normally receive individual copies. Please don't throw away your copy – pass it along to other members of the Navy Medical Department family who fail to receive it. Be sure your nurses and corpsmen get to see this periodical which often contains information of interest to them.



from the Chief

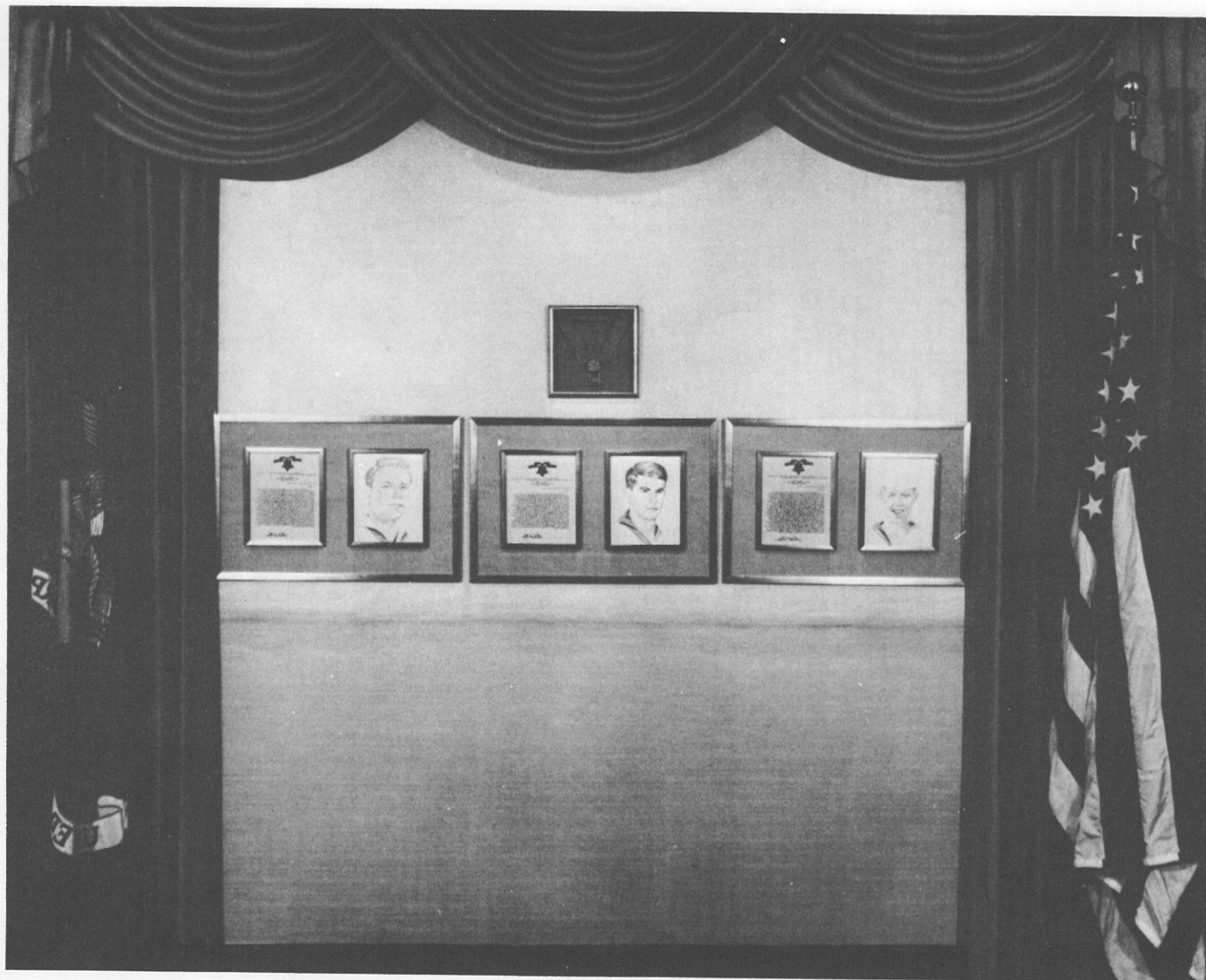
In response to the pressing need for better delivery of health care services, the development of a "physician's assistant" specialty has received increasing attention during recent months. Both civilian and military organizations concerned with medical care are formulating the educational and training requirements for such a specialist, and appropriate limits of authority and responsibility are being defined. A new program for training physicians' assistants in our Navy has just been officially announced. This approach to augmenting medical resources hardly represents, for us, a new concept. Navy Hospital Corpsmen have long excelled as medical assistants. On June 17 they celebrate their 73rd Anniversary.

In the midst of the Spanish-American War, Congress passed the Act which formally established the Hospital Corps of the Navy on June 17, 1898. The Medical Corps and Hospital Corps together share the distinction of being the two oldest members of the Medical Department. They also share a bond of origin as "war babies," since pioneer Navy doctors served at sea in the Revolutionary War. Throughout their history, members of the Hospital Corps have worked in close association with officers of the Medical Corps; they have served, respected, and known each other well. Their purpose has truly been one.

On the occasion of the 73rd Birthday of the Hospital Corps, we who are closely associated with them take special pride in honoring our Navy Hospital Corpsmen. Without their sustained effort, therapeutic success and patient comfort are seldom if ever achieved. Sometimes in awe of the astute medical judgment exercised by corpsmen, sometimes inspired by their incredible spirit and humbled by their courage, the Navy Medical Department has placed great trust and reliance on Hospital Corpsmen. This trust has been well placed.







Three Hospital Corpsmen awarded the Congressional Medal of Honor are memorialized in a tasteful exhibit which is permanently installed in the hospital lobby of the Naval Hospital Port Hueneme, Calif. On the extreme right is a copy of the citation and a sketch of HM2 Donald E. Ballard, USNR. (See U.S. NAVY MEDICINE 56(1):4-5, July 1970.) Copies of citations presented posthumously are also accompanied by sketches of HM2 David R. Ray, USN (dec.), (left), and HM3 Wayne M. Caron, USN (dec.), (center). See U.S. NAVY MEDICINE 55(6):4-8, June 1970.

NAVY HOSPITAL CORPSMEN: THE BACKBONE OF THE MEDICAL DEPARTMENT

Of all the component groups within the Medical Department family, the Hospital Corps has probably captured the public fancy and interest to the greatest extent. Its role in combat is so intrinsically decent, and its record so distinguished, that few would argue its right to this supremacy. Much sport is made of organizations which compliment and pompously extend birthday greetings to themselves. But few would find fault with a tribute to Navy Hospital Corpsmen on their 73rd Anniversary, from those in a position to know the hospital corpsmen rather well. Their idealistic stance adapts in motion to a realistic pace with

incredible precision and coordination. Their boundless energy is positively channeled into useful enterprise. Resolutely entering the worst possible worlds with the highest possible motives, they remain refreshingly unaware of their individual valor and stature.

But what of the everyday encounters under ordinary circumstances? How is the memorable corpsman caricatured? Let us count the ways —

He holds the key to unlock mysteries — the factitious fever, the anticipated weight loss or diuresis that failed to materialize.







Invariably approached by the patient in cursory consultation, he upholds the merit of your therapeutic regimen and extols your professional virtues.

Ruthlessly critical of fakery (would that we possessed his intuitive perception), he is capable of intense and unwavering loyalty to those whom he admires and serves.

Blatantly uninspired, he becomes all but immobilized with passivity when belabored by platitudes and useless amenities. (His evaluation of the latter can be remarkably accurate.) But when the chips are down and the direst emergencies arise, he quickly undertakes

the meanest of tasks, and his performance will exceed your greatest expectations.

If multiple bosses converge on the scene to direct the action, he will somehow computerize the intake and manage to do something rational.

When a critical need develops for an item that can't be had anywhere, he somehow manages to produce it. And he has the good sense not to reveal his source of supply.

It is small wonder that Navy Hospital Corpsmen have consistently rated so high in public respect and appeal. The thing of it is, just once in a while, we ought to tell them so . . . 🍀



Chris Monroe Pyle as an HA, USN. (Photo by courtesy of parents, Mr. and Mrs. Oscar Pyle).

THE IDEAS OF A CORPSMAN

Chris Monroe Pyle was born in Lyons, Kansas on 5 April 1948, the son of Mary and Oscar Pyle. Following graduation from high school, Chris enlisted in the U.S. Navy on 1 September 1966. He completed recruit training and proceeded to Hospital Corpsman "A" School, Naval Hospital, San Diego, Calif. Achieving a scholastic standing in the highest quadrant of his class, HA Pyle was rated high in motivation and capabilities, and was recommended for further training; he expressed interest in a course of instruction in X-ray Technique.

Following graduation from Hospital Corps School in April 1967, Chris was assigned to the staff at Naval Hospital Oakland, Calif., where he served as ward corpsman until November 1967. He volunteered for arduous sea duty. HM3 Pyle completed Field Medical Service Technician Training in February 1968 at Camp Lejeune, N.C., and subsequently served with the Second Marine Division. In January 1969, HM2 Pyle received orders to Vietnam, and reported for duty with the First Marine Division in March 1969. While on a

search and clear mission during operations approximately five miles northeast of An Hoa in Quang Nam Province, RVN, he sustained multiple wounds resulting from an enemy surprise firing device. Hospital Corpsman Second Class Chris Pyle was killed in action 28 May 1969. He is survived by his parents and widow, Lola.

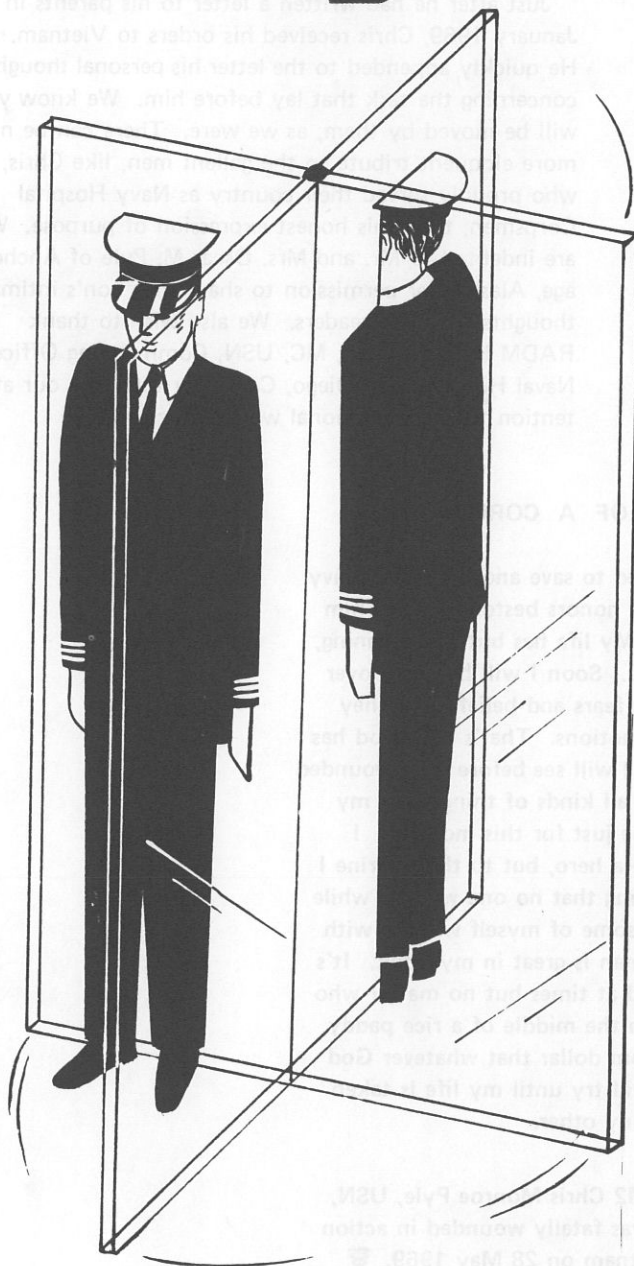
Just after he had written a letter to his parents in January 1969, Chris received his orders to Vietnam. He quickly appended to the letter his personal thoughts concerning the task that lay before him. We know you will be moved by them, as we were. There can be no more eloquent tribute to the gallant men, like Chris, who proudly served their country as Navy Hospital Corpsmen, than this honest expression of purpose. We are indebted to Mr. and Mrs. Oscar M. Pyle of Anchorage, Alaska, for permission to share their son's intimate thoughts with our readers. We also wish to thank RADM H. D. Warden, MC, USN, Commanding Officer Naval Hospital, San Diego, Calif., for directing our attention to the exceptional words which follow.

THE IDEAS OF A CORPSMAN

Many people have died to save another. The Navy Corpsman has had more honors bestowed upon him than any other group. My life has but one meaning, to save or help someone. Soon I will be going over to Vietnam. I have my fears and beliefs, but they lay hidden under my emotions. That's why God has made me so. Someday I will see before me a wounded marine. I will think of all kinds of things, but my training has prepared me just for this moment. I really doubt if I will be a hero, but to that Marine I will be God. I am hoping that no one will die while I'm helping him; if so, some of myself will die with him. Love for fellow man is great in my book. It's true they make me mad at times but no matter who it is, if he's wounded in the middle of a rice paddy, you can bet your bottom dollar that whatever God gave me for power, I will try until my life is taken to help save him, and any other.

By HM2 Chris Monroe Pyle, USN,
who was fatally wounded in action
in Vietnam on 28 May 1969. ☸

Coming and Going



RADM V. L. Anderson, DC, USN

From: CMC, Hdqtrs., Washington, D.C.

To: Staff Dental Officer, CINCLANTFLT

RADM M. E. Simpson, DC, USN

From: Staff Dental Officer, CINCLANTFLT

To: Retirement

RADM C. L. Waite, MC, USN

From: CO, NAVMEDSCOL, NNMC, Bethesda, Md.

To: Fleet Surgeon, CINCPACFLT

RADM F. B. Voris, MC, USN

From: Fleet Surgeon, CINCPACFLT

To: Retirement

CAPT F. P. Beall, Jr., DC, USN

From: XO, NAVDENCLINIC, Guam, M.I.

To: CO, 13th Dental Company, 3D MAW

CAPT J. H. Boyers, MC, USN

From: CO, Nav Hosp Annapolis, Md.

To: Staff, Naval Activities, United Kingdom, London

CAPT F. S. Brown, Jr., DC, USN

From: CO, NAVDENCLINIC, Pearl Harbor, Hawaii

To: DDO, 12th Naval District, San Francisco, Calif.

CAPT R. W. Bruce, DC, USN

From: CO, NAVDENCLINIC, Newport, R.I.

To: NAS, Alameda, Calif.

CAPT N. C. Demaree, DC, USN

From: XO, NAVDENCLINIC, Guantanamo Bay, Cuba

To: CO, NAVDENCLINIC, Guantanamo Bay, Cuba

CAPT J. J. Dempsey, MC, USN

From: XO, Nav Hosp Yokosuka, Japan

To: CO, Nav Hosp Yokosuka, Japan

CAPT D. J. Doohen, MC, USN

From: XO, Nav Hosp St. Albans, N.Y.

To: CO, Nav Hosp Quantico, Va.

CAPT A. R. Errion, MC, USN

From: CO, Nav Hosp Boston, Chelsea, Mass.

To: Retirement

CAPT J. R. Evans, DC, USN

From: CO, 13th Dental Company, 3D MAW
To: CO, NAVDENCLINIC, Newport, R.I.

CAPT P. O. Geib, MC, USN

From: CO, Nav Hosp Yokosuka, Japan
To: CO, Nav Hosp Camp Lejeune, N.C.

CAPT P. C. Gregg, MC, USN

From: NAS Corpus Christi, Tex.
To: CO, Nav Hosp Cherry Point, N.C.

CAPT W. G. Hillis, DC, USN

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To: CO, NAVDENCLINIC, Pearl Harbor, Hawaii

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From: CO, Nav Hosp Subic Bay, R.P.
To: MCRD, San Diego, Calif.

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From: NAS Kingsville, Tex.
To: CO, Nav Hosp Whidbey Island, Wash.

CAPT C. C. Muehe, MC, USN

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To: CO, Nav Hosp Boston, Chelsea, Mass.

CAPT A. D. Nelson, Jr., MC, USN

From: NAS Memphis, Tenn.
To: CO, Nav Hosp Rota, Spain

CAPT H. P. Pariser, MC, USN

From: Nav Hosp Orlando, Fla.
To: CO, Nav Hosp Subic Bay, R.P.

CAPT E. H. Prescott, MC, USN

From: NAS Atsugi, Japan
To: CO, Nav Hosp Lemoore, Calif.

CAPT E. J. Rupnik, MC, USN

From: Head, Training Branch, BUMED
To: CO, NAVMEDSCOL, NMMC, Bethesda, Md.

CAPT A. P. Rush, MC, USN

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To: NAS Pensacola, Fla.

CAPT V. E. Senter, MC, USN

From: CO, Nav Hosp Whidbey Island, Wash.
To: NAVAIRRESTRACOM, Omaha, Neb.

CAPT E. F. Sobieski, DC, USN

From: Planning Branch, Dental Division, BUMED
To: Force Dental Officer, COMPHIBPAC

CAPT G. J. Taylor III, MC, USN

From: CO, Nav Hosp Quantico, Va.
To: Retirement

CAPT D. R. Teneyck, MC, USN

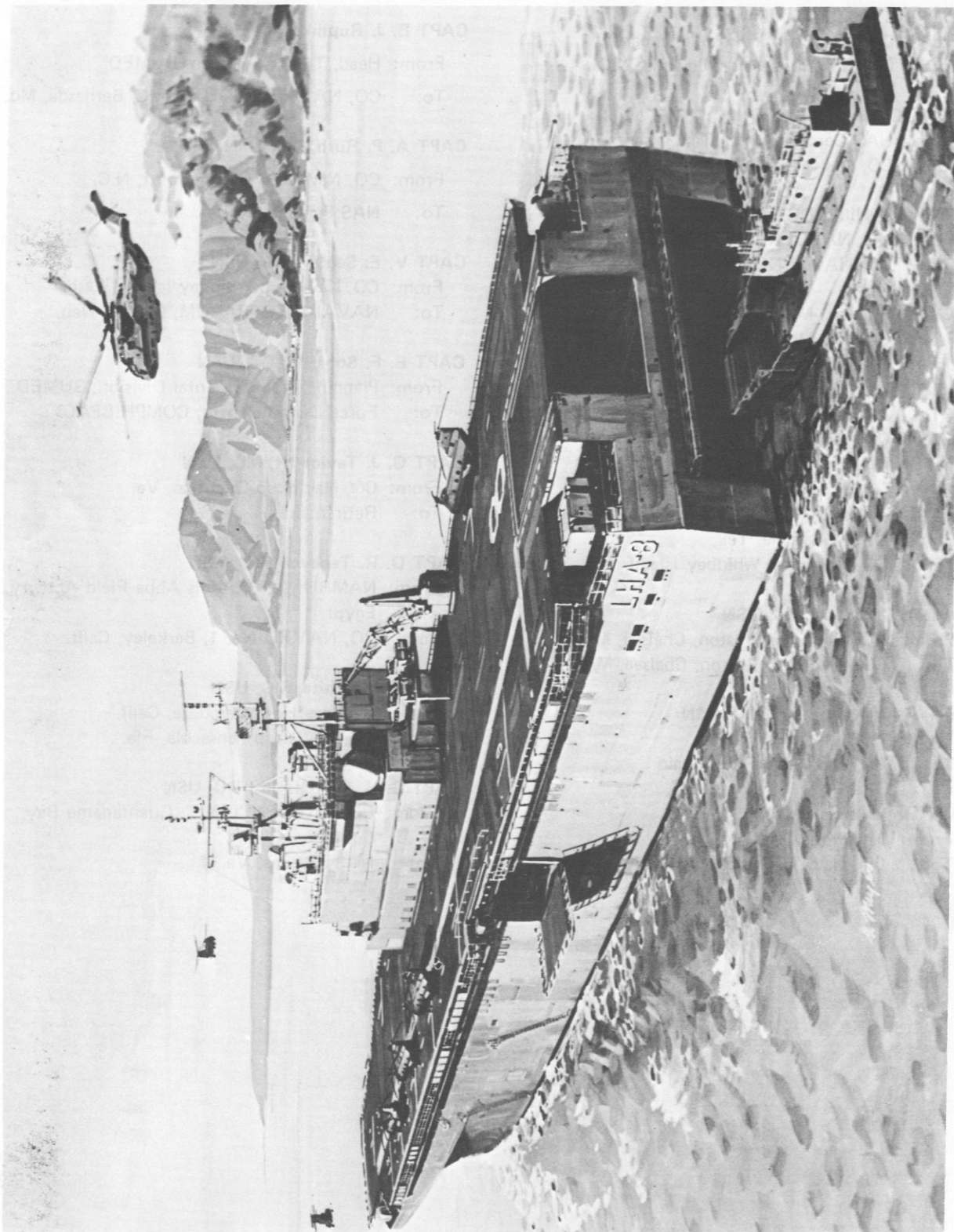
From: NAMRU No. 3, Addis Abba Field Activity,
Egypt
To: CO, NAMRU No. 1, Berkeley, Calif.

CAPT N. V. White, MC, USN

From: CO, Nav Hosp Lemoore, Calif.
To: CO, Nav Hosp Pensacola, Fla.

CAPT C. H. Wilkens, Jr., DC, USN

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Cuba
To: NAS Oceana, Va. 🇺🇸



A REPORT ON THE DESIGN AND DEVELOPMENT OF THE LHA-1 CLASS GENERAL PURPOSE AMPHIBIOUS ASSAULT SHIP MEDICAL/DENTAL SPACES

By Fleet and Marine Corps Medical Support Division, Code 49, BUMED.

I. Preface — General Information

For the past four years the Bureau of Medicine and Surgery has been involved in the complicated task of designing the most effective medical facility possible for the LHA-1 Class, General Purpose Amphibious Assault Ship.

It will have a crew of about 800 officers and enlisted men and will be able to transport a 2,000 man Marine battalion with equipment and supplies. The ships will be manufactured on the assembly lines of a \$130,000,000 mechanized facility by Litton Industries at Pascagoula, Miss. The ships represent many innovations in mission, capabilities, designs and construction techniques. The LHA will be able to load and unload in an unprecedented short time through use of both helicopters from a flight deck and landing craft from an internal well.¹

The LHA will be produced using a modular construction process with the ship structure formed by integrating six major modules which have been individually fabricated from subassemblies and components. Steel plates and shapes will be received by barge, rail or truck and off loaded into a Raw Material Storage area. They will be transferred by a materials handling system to a large Fabrication Shop. From here fabricated steel is delivered to the Panel Shop and Shell Assembly Shop for assembly and is then moved to the Shot Blast Building and Paint Shop.

These panels are transferred through the Staging and Kitting area to the Subassembly area where they are combined with nonstructural outfitting kits (electrical, piping, machinery, boilers, etc.) delivered from the Combined Shops and Warehouse, Machinery Assembly Shop and Boiler Erection area.

The subassemblies are welded together into complete sections or modules of the ship. Each module, weighing 1500 to 2100 tons, is translated by a special wheeled platform transfer system to the Integration area and mated to form the ship.

To launch the ship, now 92 percent complete, it is moved onto the Launch Pontoon. The Launch Pontoon,

with the ship riding it, is moved into the ship channel and submerged. The floating ship is then towed from the pontoon to the Outfitting Docks. The Pontoon is surfaced and returned to its area for another launching.² Figure 1 provides a chart drawing of Litton Industries' automated Ship Production Facility.

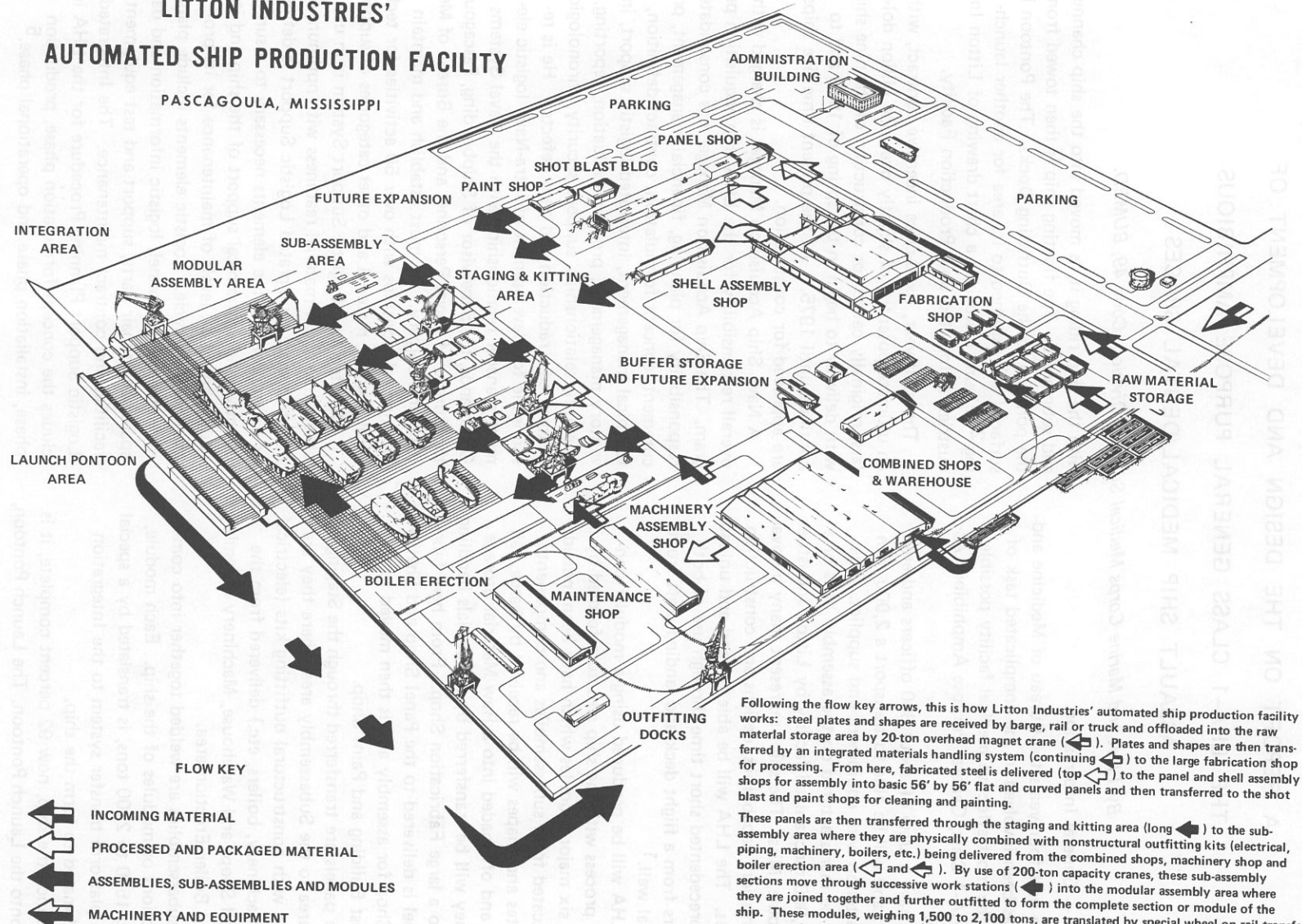
The multiyear, fixed-price incentive contract, with an ultimate potential of slightly over one billion dollars, originally called for construction of the nine ships with delivery to begin in the spring of 1973 and to continue until 1975.¹ At the present time five ships are approved for construction.

A Navy Ship Acquisition Manager is charged with overall responsibility for the LHA ship acquisition program. The Ship Acquisition Manager has consolidated responsibility for planning, financial management, procurement, concept formulation, contract definition, technical management, integrated logistic support, inventory management, program evaluation, reporting, operating relationships, support, security, chronological history, cost reduction and zero defects.³ He is responsible for development of intra-Navy logistic element manager relationships with the Naval Systems Commands, the Supervisor of Shipbuilding, Pascagoula, the Bureau of Naval Personnel and the Bureau of Medicine and Surgery. He must establish and maintain working relationships with over 50 activities for technical, logistic, material and other categories of support.

An Integrated Logistic Support System is in use to obtain maximum material readiness with optimum cost effectiveness.⁴ Integrated Logistic Support is defined as a composite of the elements necessary to assure the effective and economical support of the ship and its equipment at all levels of maintenance for its programmed life cycle. Logistic elements include planned maintenance, personnel, logistic information and data, spares and repair parts, support and test equipment, facilities and contract maintenance. The Integrated Logistic Support Planning Procedure for the LHA includes the concept formulation phase, production phase, installation phase and operational phase.⁵

LITTON INDUSTRIES' AUTOMATED SHIP PRODUCTION FACILITY

PASCAGOULA, MISSISSIPPI



Following the flow key arrows, this is how Litton Industries' automated ship production facility works: steel plates and shapes are received by barge, rail or truck and offloaded into the raw material storage area by 20-ton overhead magnet crane (↕). Plates and shapes are then transferred by an integrated materials handling system (continuing ↕) to the large fabrication shop for processing. From here, fabricated steel is delivered (top ↕) to the panel and shell assembly shops for assembly into basic 56' by 56' flat and curved panels and then transferred to the shot blast and paint shops for cleaning and painting.

These panels are then transferred through the staging and kitting area (long ↕) to the sub-assembly area where they are physically combined with nonstructural outfitting kits (electrical, piping, machinery, boilers, etc.) being delivered from the combined shops, machinery shop and boiler erection area (↕ and ↕). By use of 200-ton capacity cranes, these sub-assembly sections move through successive work stations (↕) into the modular assembly area where they are joined together and further outfitted to form the complete section or module of the ship. These modules, weighing 1,500 to 2,100 tons, are translated by special wheel-on-rail transfer system to the ship integration area and mated to form the complete ship.

In launching, movable wingwalls allow the ship, now 92% complete, to be translated via the transfer system onto the launch pontoon. After replacing the wingwalls, the launch pontoon is moved into the ship channel and submerged. The ship, now floating, is towed from the pontoon (↕) to the outfitting docks for testing and sea-readiness preparatory to sea-trials and delivery.

Figure 1.

An intensified configuration Management Program will be in effect throughout the LHA ship life cycle.⁶ It is desired that the contractor have the maximum degree of design and development latitude. In the interest of economy, changes will be limited and subject to comprehensive analysis and evaluation with consideration of impact prior to approval.

A baseline configuration will be established in the concept formulation phase which will be subject to change with increasing difficulty during contract definition, acquisition and operational phases; the Ship Acquisition Manager is forced to be economy-minded. There can be no cost overrun and he wants the best ship possible at the cheapest life cycle cost. To reach this goal, he desires intra-ship standardization and assembly line production. The estimated life cycle for the LHA class ships is 20 years. If the shipbuilder can mass produce identical LHA type ships and limit changes, minimum life cycle costs will result. The multi-year fixed price contract favors cost consideration at the expense of change and modification during implementation and operational phases for improved performance. Use of feedback information during production and operational phases to initiate changes for increased performance is a costly business involving engineering change proposals and cost negotiations between the government and the shipbuilder.

II. BUMED Participation in LHA Program

The Chief, Bureau of Medicine and Surgery, is the Logistic Element Manager for medical and dental activities related to Integrated Logistic Support (ILS) of the LHA Ship Program. BUMED's duties are as follows:

1. Provide ILS planning data and logistic requirements criteria.
2. Provide logistic technical and policy guidance in area of expertise (i.e. sanitation, sewage treatment, air, temperature, humidity, physical security, human factors, space and other medical facility requirements).
3. Provide a central LHA ILS contact within organization.
4. Monitor the LHA ILS Program to coordinate supporting actions within command.
5. Provide assistance and monitor procedures and data used in preparation of Hospital Design and Instrumentation Study.
6. Provide Medical and Dental installed equipment and outfitting requirements in accordance with shipbuilder's required delivery dates.

The Bureau of Medicine and Surgery is assisted in these duties by the Field Branch, BUMED.

III. Study of Medical Requirements

Litton System Inc., supported by the Life Systems Research Institute, conducted a design study to determine medical and dental facility requirements for the LHA.⁷ The study approach entailed an iterative process involving several levels of analysis. First, a requirements analysis was performed including a medical mission definition and casualty analysis to develop gross medical requirements upon which to base the identification and description of major medical functions. Following this, an analysis of each function was conducted to identify and define the major procedural activities which in turn led to identification of medical care requirements. After medical care requirements were identified, space, equipment, and supply needs for the LHA-1 Class Ship Medical facility were determined, including triage areas, the primary medical facility, primary access routes and alternate passageways, battle dressing stations, support services and dental care spaces.

As part of this study, the following end products were formulated: (1) procedures identification, (2) equipment and supplies, (3) identification and staffing requirements.

The prime end products of the study were recommendations for performance specifications and space and equipment layout for the LHA-1 Class Ship Medical spaces.

IV. Medical Care Requirements

The LHA Medical Care Facility can be considered as operating under two quite different conditions: the combat mode and the noncombat mode. During noncombat operations, the medical facility will serve primarily as a medical/dental clinic and surgery/general ward. The mission of the facility changes radically during assault operations. It must then be primarily concerned with surgical treatment and be able to handle a wide variety and complexity of conditions including orthopedic, ENT, ophthalmological, neurosurgical, thoracic, abdominal, urological, and vascular problems. Space used for medical clinics during the noncombat situation will be converted to treatment areas for the many burn, minor surgical, orthopedic and resuscitative problems occurring during combat. As space is at a premium aboard the LHA, additional area must be provided for the care of a large number of recovering patients in troop berthing areas adjacent to medical facility spaces.

In the combat mode, the medical facility must be prepared to handle multiple conditions including major

surgery, minor surgery, orthopedics, burns, medical problems, surgical problems, psychiatric problems and chemical/biological/radiological casualties.

Since the combat mode represents the fundamental mission obligation and the worst case situation, the design and flow of patients within the medical care facility must be structured for surgical treatment.

The concept upon which the provision of medical care is based is one of a logical flow of patients through the facility so that diagnosis and treatment can be provided most effectively. Incoming casualties will first be brought to a preliminary receiving area (triage area) on the flight deck for helicopter arrivals and on the third deck for landing craft arrivals. Here they will be screened and sorted and essential resuscitative measures will be instituted. Those cases needing surgical treatment will then be channeled to the preoperative, resuscitative, débridement area of the medical facility where these services will be provided. In this area the patient's condition will be stabilized, the patient will be prepared for surgery and anesthesia will commence prior to removal to the operating room suite. The medical facility must contain operating rooms, X-ray rooms, a laboratory, pharmacy, central stores supplies, a central sterilization unit, a postoperative recovery/intensive care unit, and ward areas.

The functional areas identified are triage, primary treatment, surgery, intensive care, primary ward and combat ward.

The LHA medical facility requirements were formulated to great extent on the basis of past experience and the use of other types of amphibious ships in disaster relief and combat operations. In Vietnam, amphibious assault ships provided on the scene definitive emergency lifesaving care at the time that combat casualties were incurred. By use of rapid helicopter evacuation from the combat zone to the LPH's and other amphibious ships, combat casualties were successfully treated for war wounds which probably would have been fatal in previous armed conflicts.

The medical and dental facilities of the LHA ship are considered as a complete subdivision of the total system and consist of the following elements:

- a. medical facility
- b. dental facility
- c. miscellaneous medical provisions
- d. morgue

Figure 2 provides a detailed drawing of the LHA medical and dental primary treatment areas.

The general specifications of the medical and dental facilities of the LHA ship require that:

- a. The medical and dental facilities of the LHA

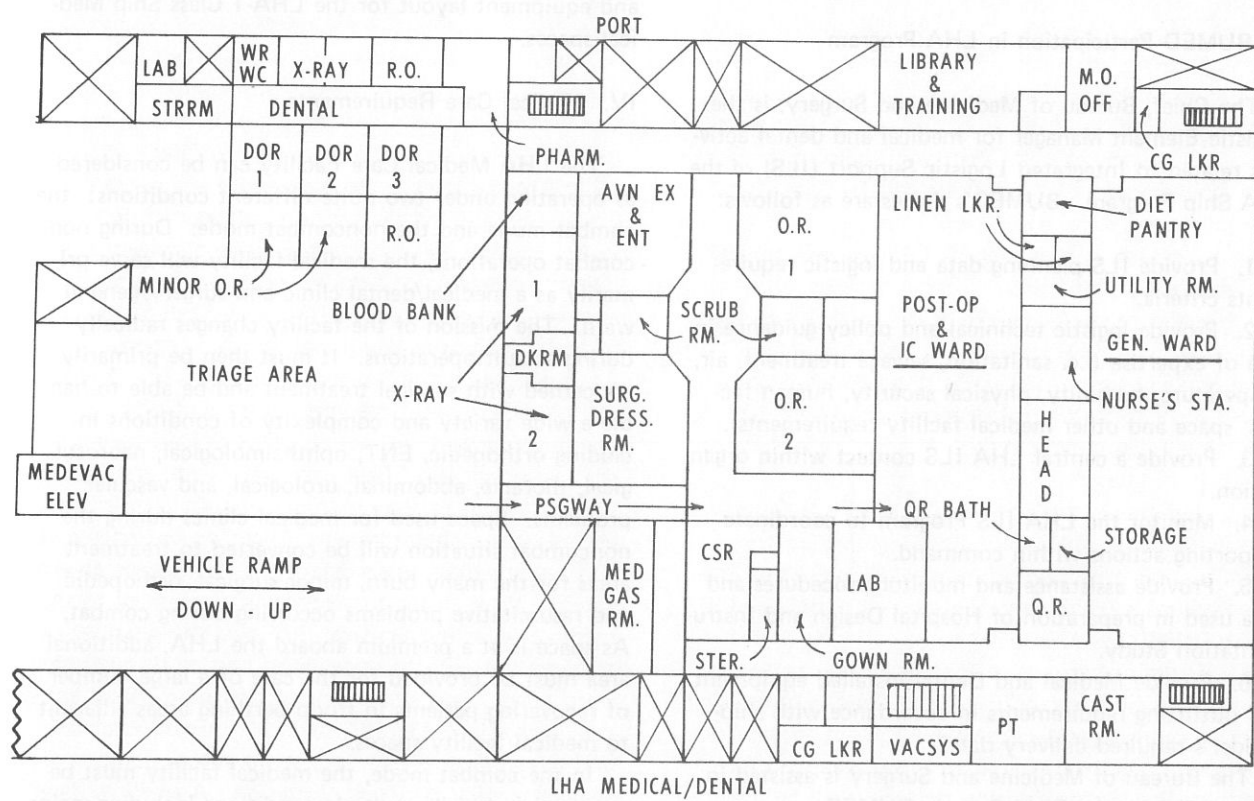


Figure 2.

ship shall be sized, arranged and equipped to provide intensive medical care of 300 combat casualties and routine medical treatment of all embarked ship and troop personnel.

b. Beds and berths shall be provided in the wards for two percent of the accommodations.

c. The primary elements of the medical facility shall be located amidships.

d. The general arrangement of the medical facility within the hull envelope shall provide maximum isolation from personnel traffic required for other ship-board functions and assault operations. The internal arrangement of the medical facility shall provide the maximum possible integration of functionally related operational and service spaces.

e. Battle dressing stations shall be readily accessible and shall be located so as to offer the least probable interference with the ship's operation. Instrument sterilization and emergency operating facilities shall be provided.

f. A casualty collecting (triage) area large enough to accommodate 50 patient litters shall be provided directly adjacent to the principal medical area.

g. Overflow wards, which are converted troop berthing spaces, shall be located adjacent to the primary medical area. Overflow accommodations for 240 patients, not over two patients per tier, shall be provided. Accesses between the main hospital area and the emergency ward provision shall be sized and arranged to facilitate the transportation of litter-borne casualties.

h. A medical elevator shall be installed to facilitate the rapid transfer of casualties from the flight and hangar decks to the triage area. The elevator shall provide a platform approximately 16 x 8½ feet for the accommodation of the litter-borne patients and shall be designed to complete one full cycle of operation in less than three minutes.

i. In addition to the above, access shall be provided to facilitate the rapid transportation of patients from the flight deck and well deck to the medical facility in the event of elevator failure.

j. Lighting within the medical spaces shall meet the requirement of the General Specifications Section 9640-1. Air conditioning and ventilation within the medical spaces shall meet the standards contained in NAVSHIPS0938-018-0010.

k. Administrative-type furniture, such as desks, chairs, and filing cabinets in the apparatus room, operating room, pharmacy, sterilizing room, surgical dressing room, quiet rooms, wards, triage area, and main and auxiliary battle dressing stations, shall be designed for Grade B shock.

l. Boundary bulkheads of medical X-ray spaces shall be constructed of steel and shall be lined with lead 1/16" thick, or equivalent shielding material.

m. Exposed surface of deck covering in the triage area shall be contoured to provide drainage at several locations throughout the area. Total drainage capacity shall not be less than 250 gallons in five minutes.

n. Six garden hose type and reel units equipped with temperature and pressure regulators shall be provided in the hospital triage area. Hot and cold fresh water supply connections shall be furnished for each hose and reel unit.

o. Six 220-volt electrical outlets shall be provided in the hospital triage area to permit full use of 50 MA mobile X-ray units.

p. Twenty 115-volt electrical outlets shall be provided in the hospital triage area to permit full use of mobile surgical lights and other medical equipment.

q. A minimum of 42 foot-candles of light shall be provided by general lighting in the hospital triage area.

r. Six operating lights, overhead-mounted on booms, shall be provided in the hospital triage area.

s. Central oxygen suction and nitrous oxide service, equipped with suitable safety devices and a failure alarm system, shall be provided for the operating rooms, wards, quiet room and triage area.

Operating and Surgical Dressing Rooms. The location of the operating and surgical dressing rooms shall be based upon considerations of access and stretcher handling. The surgical dressing room shall be adjacent to a sick-call lobby. The operating room and the surgical dressing room shall be located adjacent to each other with a common sterilizer room and scrub room. One access door to the operating room and two doors to the surgical dressing room shall be provided in order to facilitate sick call. The surgical dressing rooms, the aviation examining and EENT rooms shall be capable of being utilized as additional operating rooms.

Consultation and Pharmaceutical Spaces. A medical records office, a medical department office, a medical property and accounting office and a pharmacy shall be provided. These particular spaces shall be located adjacent to the sick-call lobby, thus permitting orderly and efficient patient processing during sick call. The patient shall, upon entering the lobby, be able to proceed through the surgical dressing room or to the medical department office, then past the pharmacy on the way out without entering or passing through the ward areas. Two small consultation rooms shall be provided adjacent to the medical department office and the surgical dressing room, to ensure doctor-patient privacy during consultation. A small medical storeroom adjacent to, or in the vicinity of, the

pharmacy shall be provided to afford ample medical supplies readily available.

X-ray and Bacteriological Facilities. The X-ray facilities and the bacteriological laboratory shall be located in the general vicinity of the operating rooms.

Physiotherapy Facilities. The physiotherapy room shall be divided into wet and dry spaces. The wet physiotherapy space shall provide accommodations for sitz bath, arm and leg baths, together with a tub for therapeutic treatment of burn cases and physical therapy. The physiotherapy dry space shall contain an examining and treatment table, an infrared lamp, and electric baker.

Aviation Examination Facilities. The EENT room shall have a separate eye examining room, and shall be located directly adjacent to the aviation examining room. A soundproof audiometry booth shall be located within the EENT room.

Dental Facility. The dental facility shall provide for administration of routine dental care to the personnel of the embarked ship's crew, staff units and landing force. The dental facility shall be arranged to provide an integrated functional entity and be located so as to minimize the flow of personnel traffic and interference with other functions within the medical area. Three dental operating rooms shall be provided. In addition, a dental office and an X-ray darkroom shall be provided. Adequate protection from X-rays shall be provided. The dental spaces shall be so arranged that the dental chairs are located athwartships to afford better footing for the dentist against ship roll. A small waiting lobby shall be provided at the entrance to the general dental area. A self-preparation and preventive dentistry room equipped with four lavatories and space for an instructor shall be provided within, or closely adjacent to, the dental facility for the stowage of break-out dental stores. A dental utility space shall be provided for the stowage of equipment required for the cleaning and maintenance of the dental facility.

Miscellaneous Medical Provisions

First Aid Boxes. First aid boxes shall be distributed throughout the ship, installed in areas where personnel are assigned to work stations and in passageways used by repair parties.

Portable medical lockers and litters. Portable medical lockers and litters shall be distributed throughout the ship and installed in passageways or spaces readily accessible to repair party personnel.

Morgue. A morgue shall be provided and equipped with 12 refrigerated cadaver cabinets and a medical examination table. The morgue shall be located so as to

provide close access to flight deck triage area, but access shall be arranged such as to be isolated from the normal traffic routes of shipboard personnel.

V. LHA Supplies and Manning Level

Estimated cost of medical supplies to be carried aboard the LHA type ship is \$300,000. Estimated cost of dental supplies is \$18,500. This level of supplies is considered the minimum that is to be maintained on board at all times for normal peacetime operations. While the ship is transporting troops, the ship's medical and dental departments will be augmented by troop medical and dental personnel and supplies.

When the LHA ship is ordered to a disaster area or to participate in an amphibious assault operation, the ship's medical and dental complement will be augmented with supplies and personnel to provide intensive medical, surgical and dental care for 300 combat casualties, in accordance with BUMED emergency procedures for providing augmentation surgical teams, personnel and supplies for disaster control and amphibious assault operations.^{8,9}

Conclusion

In an amphibious assault operation it takes time to secure enemy territory and erect hospital facilities ashore. Combat experience in Vietnam aboard amphibious assault ships demonstrated how effectively lives could be saved by rapid helicopter evacuation of wounded assault troops to amphibious ships equipped to provide intensive medical care and treatment. The proposed LHA type amphibious assault ships will provide intensive medical care facilities for casualties. The LHA medical and dental facilities were developed from an analysis of medical requirements in past wars reflected by medical mission and casualty data.

The most difficult task in ship design is to determine tomorrow's requirements today. Hindsight is always better than foresight. Under the Integrated Logistics Management system and current ship building procedures, changes in ship design can be made during the concept formulation and contract definition phases. However, once the Navy signs a contract with the shipbuilder, further modifications become difficult and expensive. Changes desired during construction and operational phases of the ship life cycle must be accomplished by engineering change proposals, mutual change agreement or by ship alteration. Engineering change proposals and mutual change agreements must be negotiated between the Navy and shipbuilder; these are usually expensive. Ship alterations are accomplished

after delivery of the ship to the Navy by the contractor. The basic premise for making a change to a ship, system or equipment is that performance will be improved. Proposed changes or alterations will be approved only if their overall value outweighs the cost in terms of money, manpower requirements, and the logistic support involved.¹⁰

It is considered that the LHA medical facilities will be modern and efficient. Casualties can be transferred from helicopter to "sick bay" in less than a minute via special medical evacuation elevator. Sick bay includes four operating rooms and has the capacity to handle 300 patients under battle conditions. The Navy has attempted to take advantage of industrial design ingenuity and intensified management during the design and building phases. This effort should assure production of the most cost-effective ship possible, over a 20 year life cycle, in terms of acquisition maintenance, repair and operational costs.

(Continued from p. 42)

and other special collections in the Washington area. An updated list of suggested research topics is included, and we might add, our own Medical Department offers a wide world of opportunity for those interested in serious medical history writing. 🍀

UNIFORMED SERVICES ALMANAC

For commissioned officers and enlisted men in the military services of the U.S. Compiled and edited by Lee E. Sharff, 13th Ed., 1971, 154 pages, \$1.60 individual copy price via first class mailing, \$1.25 via regular mailing. Special Club Package rates and official government

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order numbers available; write Uniformed Services Almanac, P.O. Box 400, Washington, D.C. 20044.

Although this is not an official publication, all the contents have been researched from official sources. It is recognized as a reliable and useful handbook, published annually, containing an incredible compilation of information ranging from state bonuses, to pay tables, taxes, social security benefits, retirement benefits, home buying, and dependency and indemnity compensation. If you're familiar with the booklet, it needs no recommendation. If not, we think you'll find it well worth the price. 🍀

INDUSTRIAL HEALTH WORKSHOP

An Industrial Environmental Health Workshop will be held in San Francisco, 15-19 November 1971. Although sponsored by the Navy, past workshops have been extremely valuable to other governmental agencies with occupational health and safety programs.

Besides the medical directors of the Civil Service Commission and the Department of Labor's Bureau of Employee Compensation, speakers will include noted specialists and experts on occupational medicine.

The program should be of particular value to physicians, nurses, safety officers and industrial hygienists. For further information, write:

Naval Ordnance
Environmental Health Center
3333 Vine Street
Cincinnati, Ohio 45220. 🍀

SIT-DOWN AND FOUR-HANDED

"Four-handed dentistry" (the doctor and assistant working as a team) is the order of the day in the Navy's newest and most modern dental clinic at the Naval Air Station Miramar, Calif. In a recently initiated program, the assistants are local college students interning with Navy dentists there.

The master jet air station dental clinic, located some 14 miles north of San Diego's civic center, is well within the city limits. In a windowless, air conditioned building the facility boasts 14 operatories, four preventive dentistry rooms, a laboratory, and a complete X-ray unit. It also has storerooms, office spaces, and comfortable waiting rooms sufficient for the needs of a military facility that provides dental health care for

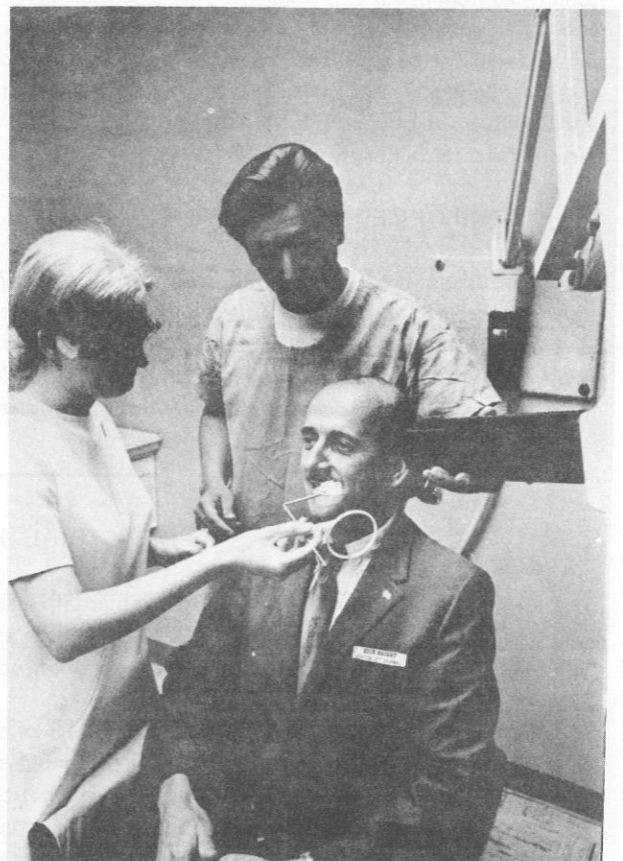
between seven and ten thousand active duty military personnel. Military dependents and retired personnel also use the facility.

At this ultramodern Navy dental clinic the NAS Miramar senior dental officer, CAPT K. L. Longeway conducts an intern program for student nurses attending the Grossmont Community College and the San Diego Mesa College. CAPT Longeway was instrumental in the program inception at the Naval Training Center, San Diego, in 1964 and has continued the program at Miramar.

The students acquire part of the clinical phase of their education by assisting dental officers assigned to the clinic. Under skilled supervision the girls receive



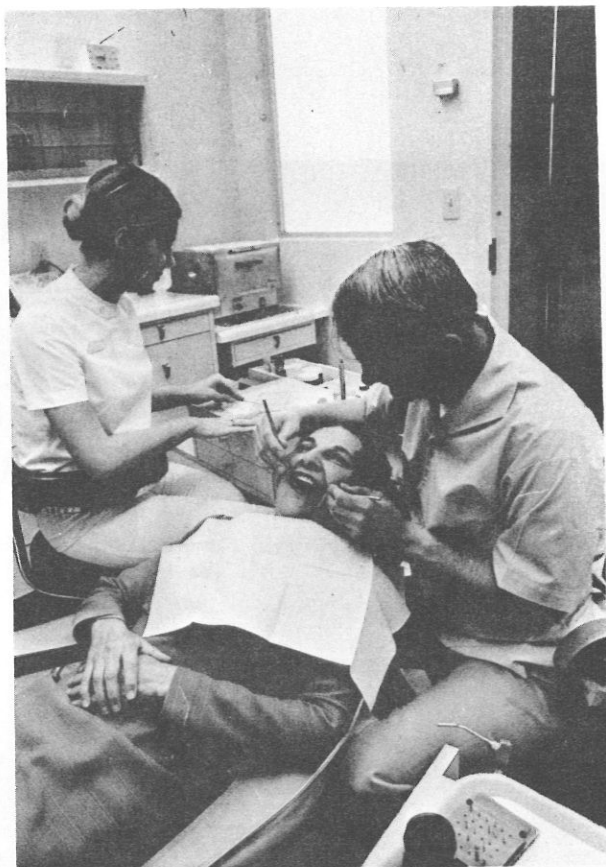
A mixed group of students from Grossmont Community College and the San Diego Mesa College gather to watch LT Kenneth R. Harris, DC, and assistant demonstrate four-handed dentistry. Visible in the foreground is the dental assistant's unique all-in-one instrument kit.



Patty Grable, (left), a third semester dental assistant from the San Diego Mesa College, demonstrates the "long cone technique" as DN Mike Padilla supervises.



Jenny Edwards, a fourth semester student from Grossmont Community College, removes an instrument tray from a dri-clave at the Naval Air Station Miramar ultramodern dental clinic.



Four-handed dental assisting is demonstrated while CDR James L. Workman, DC, USN assisted by San Diego Mesa College student, Lynn Winters, applies the final touches to a patient's bridgework. Note the contoured chairs and mobile units which make modern dental assisting ideal.

training in a complete cycle of dental functions. They gain practical experience in X-ray procedures, oral surgery, endodontics, periodontics, prosthetics and operative dentistry; the major portion of their time is spent assisting the dentist utilizing the newer "sit-down four-handed dentistry."

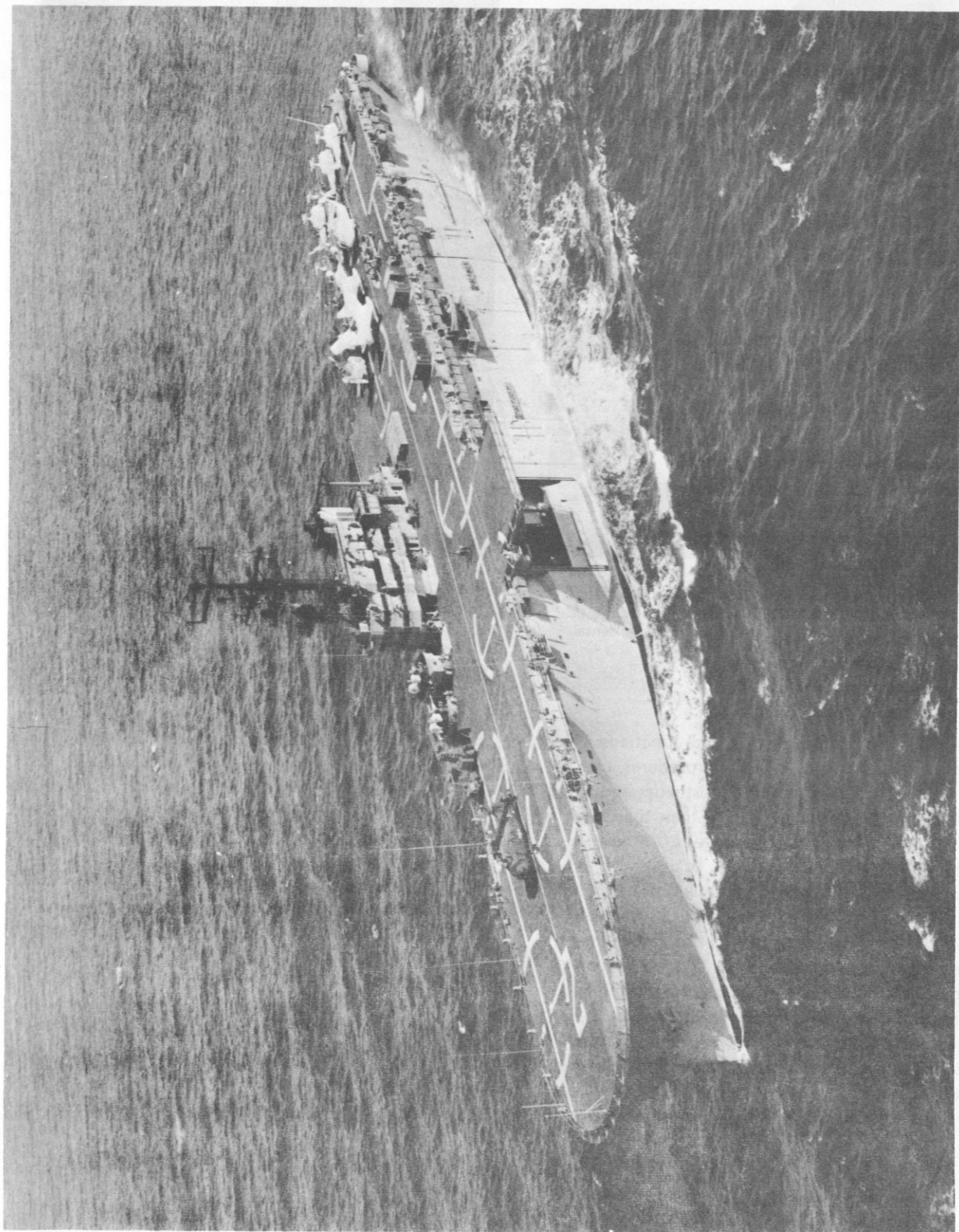
Students receive from two to ten weeks of training at Miramar's dental clinic. They find that the contoured, comfortable chairs provide unlimited patient positioning while the mobile units and instrument kits employed by the dentist and assistant contribute to an ideal environment for modern dental procedures.

The abundance of naval pilots and aircrewmembers patients add to the glamour of "military duty" for the girls as the sound of jet airplanes overhead competes with the turbine noises of the high-speed dental hand-

piece. From the patient's point of view the sight of a pretty dental assistant provides an unexpected welcome distraction. Dental officers at the clinic are delighted with the girls' enthusiastic attitude toward the program as they progress rapidly and gain valuable experience.

Speaking for the Grossmont Community College group a recent student, Peggy Konzen said: "This has been a wonderful experience, enabling us to work with different materials and several doctors." Another student commented, "It's good experience and training for later work in private offices as dental assistants."

Rated as "outstanding" by both military and college officials the program, with its modern training concepts, benefits not only the students, but also the profession and the community.—Service Information Office, Naval Air Station, Miramar, Calif. 🍀



U.S.S. Iwo Jima (LPH-2)

LPH MEDICAL DEPARTMENT

PROBLEMS AND VALUABLE EXPERIENCE

By LCDR Maurice F. P. Masar, MC, USN, PHIBRON Medical Officer,
USS Cleveland (LPD-7), FPO San Francisco, California 96601.*

The following observations have been made over a period of seven years. They form the basis for recommendations to utilize and maintain the capability of the LPH (Amphibious Assault Ship) medical department which is viewed as a source of valuable experience for assigned personnel.

The Iwo Jima Class LPH is a helicopter carrier designed for support of amphibious and helicopter assaults. The vessel contains a unique medical department which embodies all the usual elements of a

shipboard sick bay, and in addition has the sophistication necessary to support major surgery, intensive care and mass casualty handling. In physical size alone the medical department occupies more than 10,000 square feet and can expand from 12 to 150 beds.

Different from the usual shipboard sick bay in concept and operation, the LPH medical department is comparable to a hospital in size and capability. Their basic similarities in organization are shown in Figure 1 and Figure 2.

The medical department despite its size functions as a normal sick bay, but the eight to fifteen corpsmen presently assigned are barely enough to operate and maintain it in this capacity. The mission of an LPH is to transport marines for an assault. Once the marines have debarked the ship, casualties can be accommodated in the troop living space aft of the sick bay proper, expanding the bed capacity to 150.

*LCDR Masar spent three years as a battalion medical officer with the Second Marine Division. Since completion of a four-year general surgery residency at the Naval Hospital, St. Albans, N.Y., he has served as a staff surgeon to Commander Amphibious Squadron Three.

The opinions and conclusions expressed in this article, or items included herein, are those of the author and do not necessarily represent the views of the Department of the Navy, the Bureau of Medicine and Surgery or any other governmental department or agency thereof.

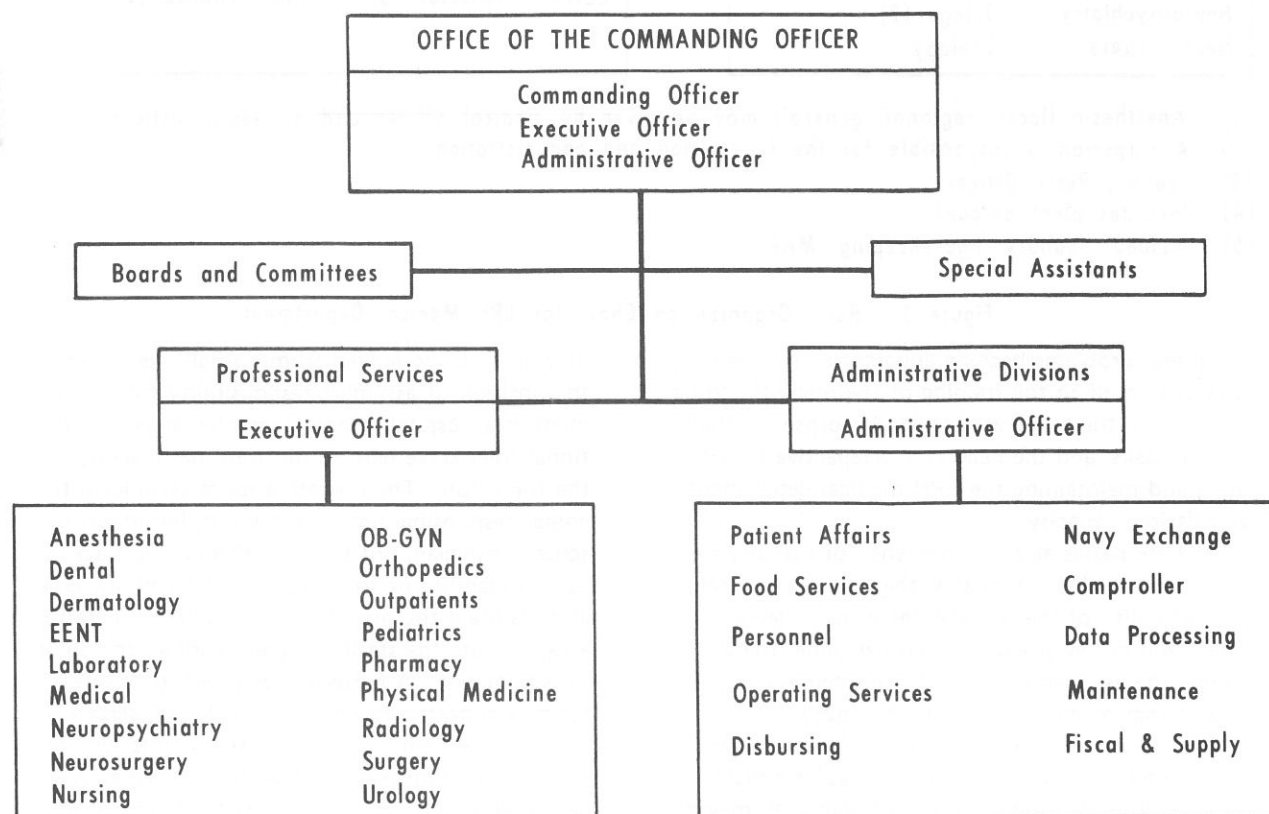
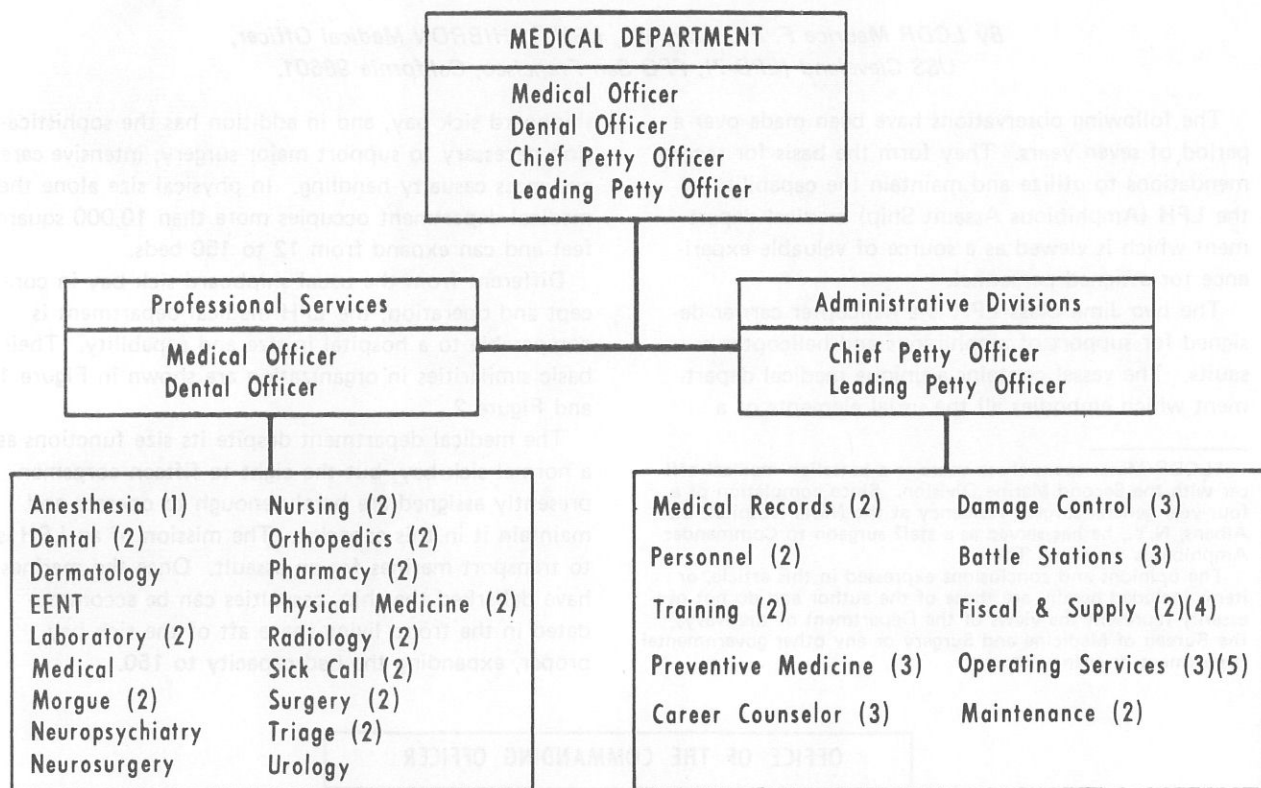


Figure 1. Basic Organization Chart for Naval Hospitals



- (1) Anesthesia (local, regional, general) may be given by medical officer and/or dental officer.
- (2) A corpsman is responsible for the supervision and administration.
- (3) Leading Petty Officer.
- (4) Includes plant account.
- (5) Includes laundry, housekeeping, MAA.

Figure 2. Basic Organization Chart for LPH Medical Department

Certain problems become apparent when one addresses himself to the training of the medical and dental officers, the number of assigned corpsmen, their various tasks, and the necessary perspective for operating and maintaining the LPH medical department at any desired capacity.

As time passes and the frequency of casualty handling aboard LPH's decreases, the impetus for realizing the capability of the medical department decreases. There will be fewer experienced personnel found among the assigned chiefs and corpsmen. It is well known that memories grow short rapidly.

As it frequently happens, the chief and corpsmen are previously indoctrinated with a rather circumscribed sense of responsibility. Though they may have come from a hospital, they functioned as individuals in a large organization; the transition to an LPH is com-

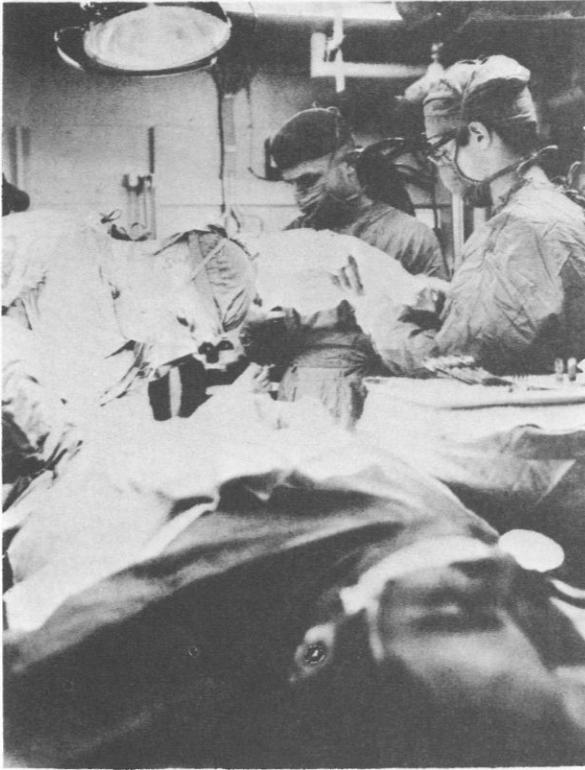
parable to being moved from a small secure niche to the position of assuming responsibility for a department in a hospital. Some examples of extended functional roles serve here to illustrate the magnitude of the transition. The operating room technician becomes responsible not only for fulfilling the role of scrub technician, but he must also put up packs, ensure availability of the necessary instruments, clean and maintain the operating room and preoperative area, operate the sterilizers and maintain the anesthesia equipment. A corpsman assigned to the treatment room is expected to hold daily sick call, screen and refer to the medical officer those patients requiring further attention, keep in readiness a cardiac arrest cart, and maintain and clean the treatment room. A corpsman placed in charge of the wards is responsible for setting up a nursing routine and watch schedule,

carrying out the doctor's orders, maintaining the various suction devices and respirators, cleaning and maintaining the ward spaces.

These corpsmen are obviously placed in supervisory and administrative positions of great responsibility. Many of the staff corpsmen are performing in more than one subdepartment because the total number of assigned corpsmen is barely sufficient to accommodate the usual sick bay organization. And it appears unlikely that there will be a surplus of corpsmen aboard LPH's in the near future.

When the corpsmen assigned to the marine units come aboard, it is essential that they be absorbed into the medical department in such a way as will allow for continued practice, improved skills, and an awareness that they are an integral part of Navy medicine. Under the supervision of LPH corpsmen who must assume responsibility for them, these newly embarked corpsmen should be assigned to various medical subdepartments which provide training and impose work obligations to support and maintain the unit. It is important to remember, however, that personnel organic to the embarked landing forces may not be available when the greatest need arises.





The chief and leading petty officer are certainly responsible for the smooth operation of the medical department and its ability to expand, but they are unable to perform each and every specific detail personally. A large share of the responsibility is delegated to the variously assigned corpsmen. Whenever that responsibility is shirked or the corpsman is unaware of it, a glaring defect becomes obvious in the face of urgent need. There will be no opportunity to correct the defect at that particular time. The resulting failure in the mission of the medical department ill serves a patient who stands to forfeit his life because the necessity for adequate preparation and acceptance of responsibility was not realized. Each LPH corpsman in his area of operation should be apprised of his responsibility for maintaining a subdepartment that can be brought into full activity when necessary.

In the course of planning for casualty handling, the medical department may be augmented by a temporary or permanent surgical team in order to utilize the more sophisticated capabilities of the medical department. This expansion may be a painful process, and friction is not infrequently generated between the medical department and augmenting personnel. The former have a proprietary attitude and experience difficulty in envisioning the expansion. The latter are troubled by integrating with the medical department and expanding

its capabilities. This represents a failure by the LPH personnel to fully appreciate their responsibilities and to periodically exercise the capacity for expansion. The cost of this negative attitude in terms of lost experience is immense.

The source of LPH medical officers will probably continue to be drafted doctors with one or two years of surgical training, who will spend their first year in the Navy aboard an LPH. They emerge from a residency where they may have become familiar with many of the problems of casualty handling, but they have no concept of the planning and logistics involved. In their residencies, they functioned as individuals in a department which was aided and supported by many other departments, such as nursing, and operating services. The existence of other disciplines was generally acknowledged without consideration of their operation and scope.

The transition from residency to administrative responsibility and the medical staff of an amphibious assault ship is all too abrupt despite three weeks of military indoctrination and the assistance of an experienced chief aboard the LPH. It is hardly fair or adequate to advise a medical officer that his chief and leading petty officer will manage the medical department and keep it operating smoothly. Even at best, classroom exercises will provide little enough preparation for the medical officer or chief who suddenly finds he has become the medical authority and administrator of an LPH medical department with all its attendant responsibilities, planning, and maintenance.

Although an incoming medical officer or chief may arrive before his predecessor departs, there is usually very little solid information relayed; the departing member has his mind on other things and both members are distracted by the amenities of coming and going.

Valuable assistance would be provided by an experienced, roving medical officer or Medical Service Corps officer who might come aboard at this time and remain for a week, assisting the medical officer and chief during their early transition period. Such a roving officer might come from the Force Surgeon's office. The same roving officer might return for another week prior to deployment of the LPH to provide assistance in preparations and point out deficiencies. Instead of cursory medical inspections, a more meaningful assistance program might thereby emanate from the Force Surgeon's office. Greater opportunity for professional guidance and counsel should result.

Such a period of assisted familiarization with an LPH medical department would enable the medical officer to perform more competently as a department

head from the beginning. The commanding officer of the LPH is dependent upon all his department heads for the efficient operation of his ship. Most of these men have been advanced to their present positions through a stepwise progression of training and responsibility. As the lone exception in this highly structured system, the medical officer is suddenly thrust into the role of department head, a position for which he is all but unprepared, irrespective of his medical competence. The roving officer could also be charged with the task of expanding the perspective of the medical officer, chief and leading petty officer, to envision their responsibilities and the extensible capability of the medical department.

It is of the utmost importance that the incoming medical officer or chief ascertain all the items necessary for operating an LPH medical department, ensuring that the essential needs for appropriate procedures and treatment are readily available and operational. This means an early inventory of supplies and a maintenance check of all equipment. Individual preferences for instruments, drugs and apparatus may vary a little, but all would agree on the need for an aspirator and cardiac arrest tray of some fashion. It is the responsibility of the medical officer and chief to compile lists of needed drugs, operating packs, etc. The variously assigned corpsmen then become responsible for providing these necessities. It is not sufficient to have enough for one patient; adequate provision should be made for managing several patients or casualties at once, if the need arises.

Unless the newly arrived medical officer or chief establishes order, strict management and intelligent delegation of responsibility from the outset, the LPH medical department suffers a progressive deterioration in morale and operational capability.

The creditable record of LPH medical departments which participated in the Dominican crisis, the Vietnam conflict, the Peruvian earthquake relief, and the Pacific typhoon relief, reveals the shortsightedness in conceiving of these facilities as sick bays in the old nautical sense of a small area set aside for the care of the sick and wounded. The number of casualties

handled and the sophistication of treatments rendered belie this outdated concept. The present and future preparedness of LPH medical departments, and similar facilities in other ships, is dependent upon the foresight, expanded thinking and responsive performance of the assigned personnel. In the spirit of this commitment, the following recommendations are offered:

1. No less than 15 enlisted personnel should be assigned to the medical department.
2. Stress the early and complete inventory of supplies, and a maintenance check of all equipment.
3. More responsibilities should be delegated to the corpsmen.
4. Increase awareness of all personnel concerning their responsibilities in the various subdepartments.
5. Embarked corpsmen should be fully absorbed into the medical department.
6. The medical department should be prepared to receive a surgical team at any time with a minimum of disorganization.
7. Increase shipboard training pertinent to the management and operation of an LPH medical department.
8. Provide a roving officer, delegated by the Force Surgeon, to render periodic assistance and guidance to the medical officer and chief.

One final note. Bouterie* very aptly describes the problems and limitations of the LPH medical department in Vietnam before certain corrective steps were taken; he then indicates in detail what the medical department is capable of when adequately staffed and managed. The present lull in the handling of casualties should not be allowed to create a false sense of security merely because there is no immediate necessity for the medical department to function other than as a routine sick bay. History has shown that such lulls can be precipitously interrupted by hostilities and natural disasters, no matter how remote. The cost of maintained readiness should be balanced against the wasteful loss of practice, precious time and life, when necessity finally strikes.

*Bouterie, R. L.: Medical Support for the Amphibious Ready Group in Vietnam. J Milit Med 136:3, 1971. 🇺🇸

POPULAR POSTGRADUATE COURSE

September 15-17, 1971 — "Current Concepts in Medicine" — Sponsored by Naval Hospital, Bethesda, Md. 20014. Course director: CAPT Lay M. Fox, MC, USN, Chief of Medicine. Open to all interested physicians, military and civilian, without fee. This is the third annual presentation of this course which focuses on subjects of current interest in the broad field of internal medicine. 🇺🇸

SHIPBOARD COCKROACH CONTROL: NEW DEVELOPMENTS AND TECHNIQUES

By LT L. Lance Sholdt, MSC, USN; Navy Preventive Medicine
Unit No. 2, Norfolk, Virginia 23511.

Among the variety of insect and rodent pests that may infest naval vessels, the German cockroach, *Blattella germanica*, is the one most frequently encountered. This ubiquitous species has been an unwelcome crew member aboard seagoing vessels since the time of the sailing ships. In fact, it was most likely introduced into this country on those ships which sailed from Europe carrying cargo and goods to the New World. Interestingly, cockroaches were often tolerated aboard these vessels because of their reported predaceous behavior toward a more distasteful insect — the bed bug.

Few ships are entirely free of cockroaches, and many have serious and extensive infestations. This situation has been attributed to inadequately trained personnel

and a lack of the proper insecticides, equipment and techniques for effective control. In recent months, advances have been made in all these areas, and the prognosis for better control of cockroaches aboard ship is considered excellent.

Diazinon, the previous insecticide of choice for cockroach control, has been replaced by a relatively new insecticide called "Baygon." Baygon or propoxur (O-isopropoxyphenyl methyl carbamate) is a derivative of carbamic acid having a low mammalian toxicity (oral LD50 of 95-104 mg/kg to rats) similar to Diazinon. It is available to surface vessels as a 1% oil solution and 2% bait. (Only the 2% Baygon bait and 3% malathion are approved for use on submarines). Advantages of Baygon solution for shipboard use include its quick

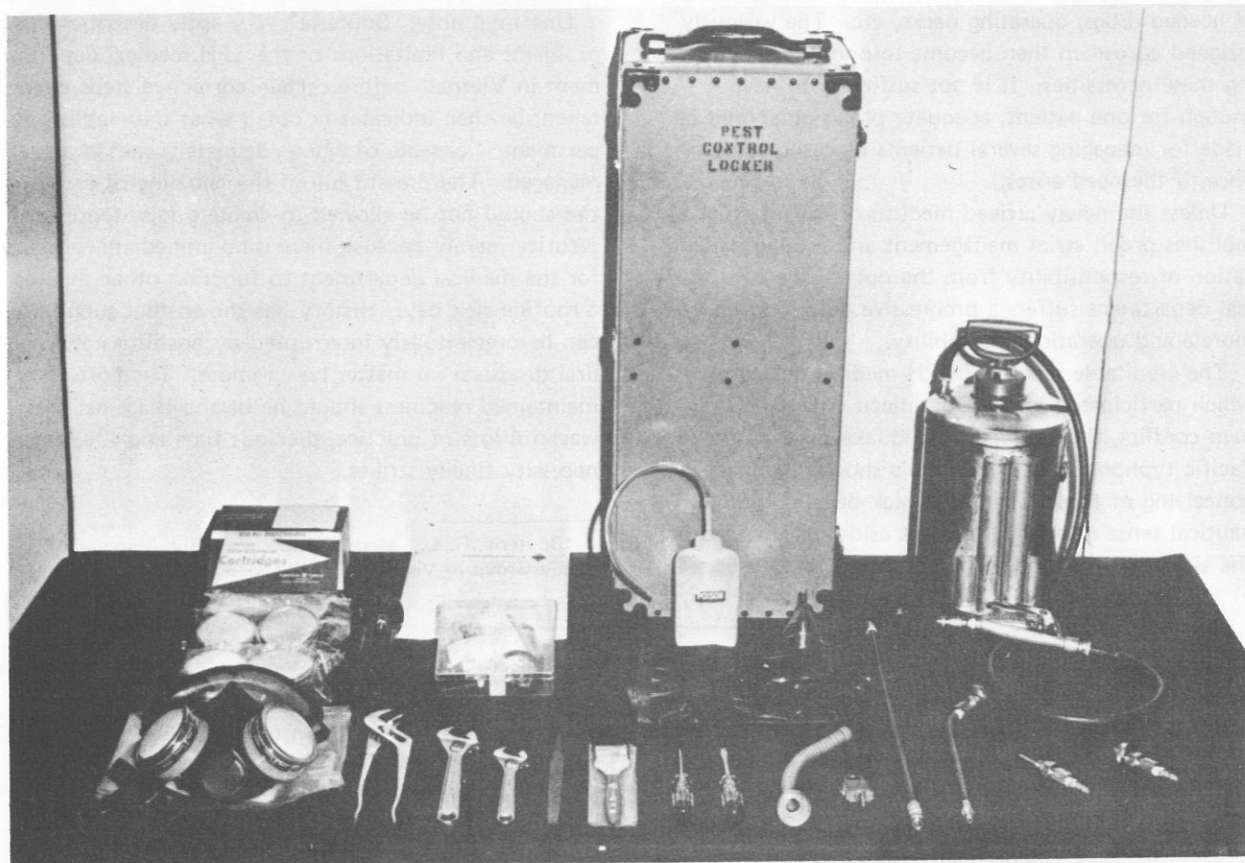


Figure 1

knockdown, long residual action on nonabsorptive surfaces such as metal, and its rapid flushing action which drives the insects out of their harborages onto the treated surface. This flushing effect also aids the operator in determining which areas require particular attention. Baygon is also characterized by the fact that it does not hydrolyze or break down in the presence of water and high humidity as readily as Diazinon.

The bait is a granulated material consisting of ground corn cobs impregnated with 2% Baygon. It is a food attractant and stomach poison which kills within 10-20 minutes after ingestion. The bait is applied where the use of a liquid is prohibited, such as in and around motor compartments, electrical fixtures and fuse boxes. It is also an excellent adjunct to sprays when used behind false bulkheads, in coke and popcorn machines, around ovens and inside cabinets and drawers. The bait retains its effectiveness for several months unless it becomes wet. The use of the bait in combination with liquid treatment is more effective than either application alone.

In the past, few ships carried all of the equipment necessary for the proper and safe control of their insect problems. Many had items which were inferior to, and often more expensive than those normally recommended. To alleviate this problem, a shipboard pest control locker (Figure 1) has been developed by Navy entomologists which contains all of the items required in a proper control program. Special adapters are included to facilitate the treatment of high overhead areas and the insulation on pipes and bulkheads. All of the components of the locker are contained in a compact case (Figure 2) designed as a central storage area, which can be secured from use by unauthorized personnel. The locker is now in use on over 150 ships and has been included as an IOL item for all newly commissioned ships.

Effective and lasting pest control requires a thorough knowledge of the target insect's biology and of the proper and safe use of the pesticides required. Training courses designed to provide basic knowledge of the elements fundamental to the control of shipboard pests are available from the Disease Vector Control Centers and the Preventive Medicine Units. The Medical Department is responsible for supervising all control operations and for procuring the proper insecticides (SECNAVINST 5430.54A). Therefore, extensive training is given to Medical Department representatives including on-the-job training aboard their ships whenever necessary. Courses in shipboard pest control have also been established at the Medical Services Technique Schools in San Diego and Portsmouth, since many of the graduates are assigned to independent duty aboard ship.

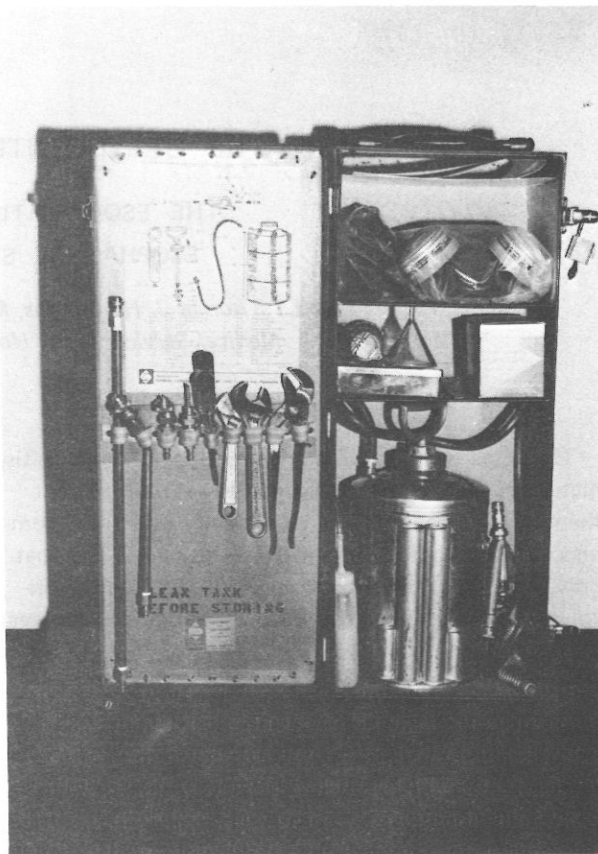


Figure 2

Cockroaches are nocturnal creatures and their presence is seldom obvious during the daytime unless a large population is present or food is scarce. They are, as a result, often overlooked during routine sanitation inspections conducted during the day. Therefore, surveys must be relied upon to determine the exact size and location of their harborages. This is accomplished by employing a pyrethrum aerosol bomb and spraying all suspected hiding places. Pyrethrum has an irritant action (similar to Baygon) which rapidly drives the insects out into the open. While inspecting for cockroaches, it should be kept in mind that their flattened bodies enable them to hide in narrow cracks and crevices, usually in places which are warm and dark. Such harborages will also be moist or located near a source of food and water. Cockroaches are somewhat "social" in behavior and are usually found clustered closely together. However, there are indications that under certain circumstances (such as continued and excessive exposure to insecticide) they may be found scattered widely throughout a ship. Control failures which occur despite the use of proper equipment and insecticides can often be traced to the lack of, or improperly conducted, surveys.

(Continued on p. 33)

THE GASTROENTEROLOGISTS' CORNER

THE ESOPHAGITIS - HIATUS HERNIA - ESOPHAGEAL STRICTURE COMPLEX

By LT Thomas J. Humphries, MC, USNR, Gastroenterology Branch,
Medical Service, Naval Hospital, Philadelphia, Pa. 19145.

Introduction

The three well known clinical entities of esophagitis, hiatus hernia, and esophageal stricture often present themselves to the internist as a closely associated complex. The purpose of this paper is to review the anatomy, symptoms, diagnostic methods, and therapy involved in the Esophagitis - Hiatus Hernia - Esophageal Stricture (EHS) Complex.

Anatomy

The esophagus (from the Greek: oisein, to carry; and phago, to eat) is a muscular tube approximately 23-25 cm in length that extends from the inferior border of the cricoid cartilage (opposite C-6) to a variable point between the diaphragmatic hiatus and the anatomic cardia of the stomach. Many articles have been written about the location, anatomy, and function of the sphincter mechanism at the gastroesophageal junction. One of the older theories proposed by Fleischner¹ stated that the lowermost two to four cm of the esophagus (vestibule) constitute a weak "internal sphincter" that prevents gastric reflux only in conjunction with a strong "external sphincter" formed by the fibers from the right crus of the diaphragm. It was proposed that barium swallow studies show the sphincter mechanism to be at the diaphragmatic hiatus and not below it, and that the hiatus therefore forms the functional cardia. The anatomic cardia is thus found at the junction of tubular gullet with the greater curvature of the stomach. The change from stratified squamous esophageal mucosa to columnar gastric mucosa (gastroesophageal junction) occurs as an interdigitation between the two cardia.

However, more current data² indicate that the lower esophageal sphincter has the intrinsic property of maintaining competence independent of its position with

respect to the hiatus. The lower esophageal sphincter is ordinarily closed except during swallowing, belching and vomiting.

Definition of the Complex

Esophagitis, the first component of the EHS Complex, was first described as "peptic" by Hamperl³ in 1934; and, it was described as a new clinical entity in the English literature by Winkelstein⁴ in 1935. Peptic esophagitis has been described^{5,6} as a subacute inflammatory process involving primarily the submucosa, muscularis propria and subepithelial layers with variable extension outward through the muscular layers, and inward through the epithelial layers. This process periodically leads to mucosal exfoliation and superficial erosions. Involvement is usually limited to the distal one-third of the esophagus, but the entire length may be affected in 10% of cases.⁷

Hiatus Hernia can be described as a protrusion of gastric mucosa above the level of the diaphragm.

The *Stricture* complicating healing peptic esophagitis is a submucosal cicatrix usually involving the most distal end of the esophagus.

Symptoms of the Complex

The symptoms most commonly associated with the EHS Complex are heartburn (pyrosis), dysphagia, odynophagia, regurgitation, belching, and hematemesis.

Heartburn is best defined as intermittent episodes of epigastric or substernal tightness or burning that radiates upward to the throat. The episodes are unrelated to exertion, made worse by recumbency and relieved by antacids.

Dysphagia has been described by Castell⁸ as a sensation that normal passage of ingested material is obstructed somewhere in the chest for variable time intervals after swallowing. It is usually brought on by solid foods, or very hot or very cold liquids.

Odynophagia, or pain related to swallowing, should be differentiated from the burning of pyrosis and sticking sensation of dysphagia. It is usually sharp or

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aching in nature, subxiphoid or substernal in location and often cardiac in radiation.

Regurgitation is the effortless appearance of "bitter" or "acid" tasting material into the mouth, particularly when recumbent or bending over.

One must remember also the term "dyspepsia." Many patients, especially older ones, may use this term to indicate any or all of the above symptoms. Further questioning is necessary to determine the exact nature of their complaint.

What are the specific presenting complaints of patients with the EHS Complex? In a study of 100 cases of peptic esophagitis, Palmer⁹ found that the most common presenting complaints were pyrosis and dysphagia (30% each), with hematemesis (10%) the next most common symptom. In a later study,⁷ Palmer deals with the EHS Complex specifically by presenting a series of 1,011 patients (225 with esophagitis alone, 598 with hiatus hernia alone, and 188 with both entities). Upper gastrointestinal bleeding (or anemia), dysphagia and pyrosis, in that order, were the most frequent presenting symptoms of the esophagitis patients. One wonders, however, if this frequency pattern is biased because of the selection by "referral" in Palmer's series. In our experience at Naval Hospital, Philadelphia, pyrosis has been, by far, the most frequent presenting complaint of esophagitis patients. The "classic" picture of hiatus hernia (pyrosis, substernal pain, and regurgitation — all worse with recumbency) appeared in only 8.9% of Palmer's patients with hiatus hernia. Vague and complicated indigestion and subxiphoid pain were more common presenting complaints (16.3%). In the remaining patients (74.8%), the hiatus hernia was discovered by chance. The final stage of the complex, esophageal stricture, occurred in 45 patients in Palmer's study.⁷ This entity consistently presents with a long history of pyrosis leading to progressive dysphagia.

Is there a common physiological event that can guide us through this morass of confusing symptomatology, theories of cause and effect and complex interassociations? The answer is, "Yes," and the event is the reflux of gastric contents into the esophagus via an incompetent lower esophageal sphincter. As a recent reviewer has stated,¹⁰ "Reflux is the name of the game." Then, with esophageal reflux in mind, let us proceed to a discussion of current modes of diagnosis and therapy.

Diagnostic Methods

Many modern diagnostic methods are available to help the physician determine the exact etiology of the symptoms of the EHS Complex. Among them are esophagoscopy, gastroscopy, biopsy, the Bernstein Test,

esophageal manometry, barium studies, and newer methods of pH measurement and acid clearing tests.

The esophagoscopic picture of hyperemia, exudates and erosions is often found in peptic esophagitis.⁹ A retroflexed gastroscope provides a view of the gastro-esophageal junction from below, and has been shown by CDR Gerald Rolling at this hospital to be useful in identifying the incompetent lower esophageal sphincter (In press). Biopsy is a valuable adjunct to endoscopy. It can be confirmatory, helps to rule out neoplasm, and reveals esophagitis in the absence of mucosal lesions.

The Bernstein Test has been shown to correlate well with the symptoms and anatomical findings of peptic esophagitis.^{11,12} This test involves instillation of 0.1 N hydrochloric acid via a nasogastric tube into the esophagus until pyrosis is reproduced (usually within 30 minutes).

Esophageal manometry provides a means of obtaining intra-esophageal pressures and is the most important method currently used in studying the EHS Complex. Winans and Harris¹³ demonstrated a high pressure zone in the distal esophagus using constantly infused polyvinyl recording catheters. This zone is the manometric manifestation of the lower esophageal sphincter, and the level of pressure in this region will separate patients with normal sphincters from those with demonstrable reflux. Using manometry, Cohen and Harris² have shown that displacement of the gastroesophageal junction (as in hiatus hernia) has no effect on the competence of the lower esophageal sphincter.

In a recent comparison of diagnostic methods currently employed in the EHS Complex, Hootkin¹² found that the Bernstein Test gave the best correlation (100%) with symptoms (pyrosis) of chronic reflux. This was followed closely by intra-esophageal pH testing and manometry. Newer methods, such as the Acid Clearing Test of Booth et al.,¹⁴ may provide further information in the future.

Hiatus hernia is best detected by the radiologist with barium studies and associated maneuvers such as the Trendelenburg position combined with the Valsalva maneuver. The experienced esophagoscopist may also detect hiatus hernias at times.

The detection of esophageal stricture also lies in the domain of the radiologist. He can diagnose slight strictures that are often missed by the endoscopist.⁷

Therapy

Incompetence of the lower esophageal sphincter, allowing reflux of gastric contents into the esophagus, is the prime physiological event in the EHS Complex.

Two possible modes of therapy are apparent; prevent reflux, or failing that, counter the effects of the reflux. However, the results of the treatment of the EHS Complex with currently known methods are usually unpredictable and often disappointing.

Until very recently, surgical plication of the area of the lower esophageal sphincter was the only method available for the prevention of reflux. However, recent studies by Castell and Levine¹⁵ have shown that deacidification of the stomach by various alkalinizing agents results in marked increases in lower esophageal sphincter pressure. Thus, it appears that conventional treatment of heartburn with alkali has a dual effect — neutralization of gastric acid and prevention of reflux.

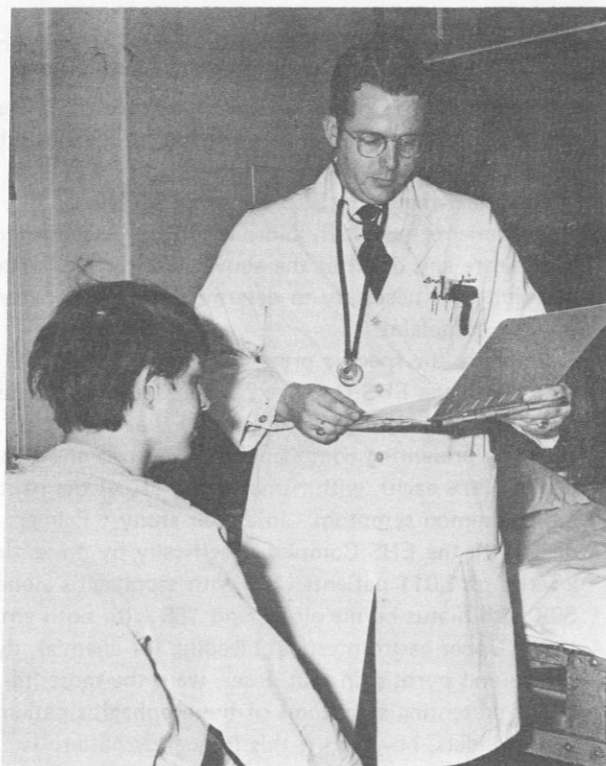
Anti-peptic measures for the treatment of esophagitis include antacids, ulcer diets, elevation of the head of the bed on wooden blocks, and the avoidance of food for the two-three hours prior to retiring. This therapy may be associated with unpredictable remissions and recurrences. One should take note of the recent work by Cohen and Lipshutz¹⁶ which stresses the importance of avoiding anticholinergic therapy in patients with gastroesophageal reflux. These authors showed that atropine decreases the resting lower esophageal sphincter pressure significantly and decreases the ability of this sphincter to adapt to increases in intra-abdominal pressure, thus providing a permissive setting for reflux.

Hiatus hernia is managed conservatively by weight reduction, head of the bed elevation, and psychological sustenance. The last of these probably gives the best results. Two complications of the EHS Complex, esophagitis with bleeding and esophagitis with stricture, are the most frequently quoted indications for surgical repair of hiatus hernia. In reality the true indications are the entities being treated, not the hiatus hernia.

Given diligence and patience on both the part of physician and patient, bougienage with mercury-filled Hurst bougies, remains an effective treatment for benign esophageal stricture.⁷

Conclusion

During its 36-year published life span as a clinical entity, the Esophagitis — Hiatus Hernia — Esophageal Stricture Complex has produced many disillusioned and confused physicians and patients. Until the development of the current methods of diagnosis and study, one has not known what physiological defect he was, or should be, treating in EHS Complex. As mentioned above, recent data from manometric studies strengthen the concept that intrinsic incompetence of the lower esophageal sphincter is the mechanism leading to gastric



Dr. Humphries is seen during ward rounds on the Gastroenterology ward at Naval Hospital, Philadelphia.

reflux. Reflux of acidic gastric contents would appear to be the primary cause of the EHS Complex. These recent studies seem to provide a clearer perspective of the minor role of hiatal hernia in reflux. Such observations prompted Dr. Laurant Harris to state that hiatal hernia is "a mildly interesting anatomic anomaly."¹⁷ Only when reflux is completely understood will the haze of confusion surrounding the EHS Complex disappear, and only then will we be able to develop an effective therapeutic regimen.

Editorial Note: "Reflux is the name of the game." The article by LT Thomas J. Humphries entitled "The Esophagitis — Hiatus Hernia — Esophageal Stricture Complex" represents the fruits of Dr. Humphries' enthusiasm as an intern on the Gastroenterology ward at the Naval Hospital in Philadelphia. He is to be complimented for assimilating some of the newer facets of a very controversial area in the field of gastroenterology. Probably the most significant aspect of this article lies in the comments on the relationship, or the lack of one, between the presence of a hiatal hernia and symptoms of gastroesophageal reflux. There is increasing recent evidence that hiatus hernia per se may be of little or no significance, and that symptomatic reflux is a result of incompetence of the lower

esophageal sphincter. It is of interest that in the extensive review by Dr. Palmer, quoted by Dr. Humphries, only 8.9% of 598 patients with documented hiatal hernia had symptoms (heartburn) of reflux. More recently, the work of Cohen and Harris, also quoted in this paper, has shown that the lower esophageal sphincter maintains its own inherent competence irrespective of its relative position in relation to the hiatus, and that many patients with even quite large hiatal hernias have a competent lower esophageal sphincter.

During recent months at the Philadelphia Naval Hospital we have been impressed with the poor correlation between manometric evidence of incompetence of the lower esophageal sphincter and the radiographic appearance of a hiatal hernia. It would certainly appear that current thinking is rapidly swinging towards the concept that the important aspect of symptomatology involving the gastroesophageal junctional area depends on whether or not the patient is having frequent reflux of gastric contents into the lower esophagus. Truly then, "Reflux is the name of the game," and the major determinant of whether or not reflux occurs would appear to be the level of the pressure barrier formed by the lower esophageal sphincter. It seems that one must readjust his thinking on hiatus hernia. Perhaps it should be relegated to the realm of an interesting anatomic curiosity that in and of itself probably rarely causes symptoms.

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(Continued from p. 29)

Spraying at random is not effective, and chemicals placed in or near cockroach harborages provide better control than those placed where contact is made only occasionally. In other words, the material should be applied where the insect is living as determined by surveys. To achieve this, spot treatment of harborages with a "pin stream" spray is the method of choice. Less emphasis is given to barrier treatment of large exposed areas (such as a whole bulkhead) with a "broad band" or "fan pattern" spray. Insecticide applied to these areas is more subject to wash-off during routine cleaning procedures and is, therefore, less effective. Because cockroaches may demonstrate a "behavioral resistance" by tending to avoid excessively treated surfaces, the spraying of overhead areas in food service spaces and adjacent berthing compartments is important.

These areas are often neglected thus providing a safe harborage for large infestations of cockroaches.

The results of periodic surveys are used to determine frequency of treatment. Insecticides are then applied only *when* and *where* necessary, giving more economical and effective control with minimal contamination of the ship's environment. Regularly scheduled spraying operations such as once or twice a week are not required when the "survey and treat when and where necessary" routine is followed correctly.

The proper equipment, insecticides, and training are now available for establishing effective cockroach control programs aboard every ship. Whether these programs are successful or not will largely depend upon the amount of motivation and interest shown by those accomplishing control operations.

THE HEMATOLOGISTS' CORNER

Hematology Fellowships

The Hematology and Oncology Branch, Medicine Service, Naval Hospital, Bethesda now offers a two-year fellowship in Hematology. The training program, which includes training in nuclear medicine and hematologic pathology, provides affiliations at the National Institutes of Health (Acute Leukemia Service), District of Columbia General Hospital (Georgetown Hospital Oncology Service), and the Navy Tissue Bank (Experimental Immunology Division), Naval Medical Research Institute, National Naval Medical Center. The program provides an in-depth exposure to the fields of oncol-

ogy, clinical and experimental immunology, and general hematology. The training program is flexible enough to prepare the fellow for either a clinical, a teaching, or a research career. The following article, "Disorders of the Blood Platelet; a Classification," was written by the current fellow CDR Elliott Perlin, MC, USN; with the assistance of LCDR Thomas F. Ryan, MC, USNR, staff, Hematology Branch, and; CDR Ross B. Moquin, MC, USN, Head, Hematology Branch.

The paper was presented at the Second Annual Current Concepts in Medicine course which is sponsored by the Medicine Service, on 19 September 1970 at the Bethesda Naval Hospital.

DISORDERS OF THE BLOOD PLATELET

A CLASSIFICATION

By CDR Elliott Perlin, MC, USN,* LCDR Thomas F. Ryan, MC, USNR,**
and CDR Ross B. Moquin, MC, USN.†

The blood platelet has been the subject of considerable study in the last several years and its role in the process of coagulation is well-known. The newer tests of platelet function are becoming more widely used in laboratories throughout the country. In our Hematology Laboratory we are performing tests of platelet adhesiveness and aggregation, and tests of platelet factor 3 activity. In addition, greater attention is being given to thrombocytosis or to the therapy of those diseases associated with thrombocytopenia.

We present a classification of the platelet disorders with the hope that it will aid the clinician in organizing his mental associations when he is called upon to treat a patient with platelet disorder. For more details regarding any of the disorders mentioned, several recent reviews are available.¹⁻³

The platelet disorders can be divided broadly into three categories: the thrombocytopenias, the thrombocytoses, and the thrombocytopathies (Table 1). The

thrombocytopenias are best classified thrombokinetically after Harker and Finch.⁴ This results in a division into (a) disorders of production, (b) disorders of distribution, and (c) disorders of destruction. The thrombocytoses are either (a) essential (primary) or (b) secondary and the thrombocytopathies are divided into (a) congenital and (b) acquired.

I. The Thrombocytopenias

The thrombocytopenias associated with decreased or ineffective production can be further divided into (1) congenital and (2) acquired abnormalities. In the congenital varieties all bone marrow stem cells may be depressed in the rare disorder of familial panmyelophthisis. A related abnormality, affecting only the megakaryocyte, is that of congenital megakaryocytic hypoplasia.⁵ The Fanconi syndrome is characterized by pancytopenia, marrow hypoplasia, and various congenital anomalies.⁶ The Wiskott-Aldrich syndrome is a sex-linked recessive immune deficiency disorder which is associated with eczema, thrombocytopenia, and repeated infections.^{7,8} Part of the abnormality may lie within the afferent limb of the immune arc, that is, patients who are afflicted are unable to recognize and to process certain types of antigens.⁹ Abnormal morphology, impaired platelet aggregation and adhesiveness,

The opinions and assertions contained herein are the private ones of the authors and are not to be construed as official or as reflecting the views of the Navy Department or of the naval service at large.

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Table 1

Classification of Blood Platelet Disorders

I. *Thrombocytopenias*A. *Disorders of Production*

1. Congenital
 - a. Familial panmyelophthisis
 - b. Congenital megakaryocytic hypoplasia
 - c. Fanconi syndrome
 - d. Wiskott-Aldrich syndrome
 - e. May-Hegglin anomaly
2. Acquired
 - a. Drug or ionizing radiation marrow damage
 - b. Myelofibrosis
 - c. Myelophthisis
 - d. Leukemia
 - e. Chronic refractory anemia
 - f. Paroxysmal nocturnal hemoglobinuria
 - g. Megaloblastic anemia
 - h. Hemolytic anemia

B. *Disorders of Distribution*

1. Congestive splenomegaly

C. *Disorders of Destruction*

1. Immune
 - a. Congenital isoimmune thrombocytopenia
 - b. Idiopathic thrombocytopenia purpura
 - c. Drug-induced thrombocytopenia
 - d. Systemic lupus erythematosus
 - e. Evans-Duane syndrome
 - f. Lymphoproliferative disorders
 - g. Infectious mononucleosis (?)
2. Consumptive
 - a. Various consumptive coagulopathies
 - b. Thrombotic thrombocytopenia purpura
 - c. Hemolytic-uremic syndrome
 - d. Giant hemangioma
3. Damaging
 - a. Viral or bacterial septicemia

II. *Thrombocytoses*A. *Essential* (Thrombocythemia) (Autonomous thrombocytosis) (Primary thrombocytosis)

1. Polycythemia rubra vera
2. Primary thrombocythemia
3. Megakaryocytic leukemia
4. Chronic myelogenous leukemia

B. *Secondary Thrombocytosis* (reactive thrombocytoses)

1. Inflammation
2. Iron deficiency
3. Blood loss
4. Neoplasia
5. Postsplenectomy

III. *Thrombocytopathies*A. *Congenital*

1. Congenital thrombopathia (or thrombocytopathia)
2. Dystrophie thrombocytaire hémorragipare
3. Plasmatic thrombocytopathia
4. Thrombasthenia (Glanzmann disease)
5. Von Willebrand's disease

B. *Acquired*

1. Uremia
2. Macroglobulinemia
3. Liver disease
4. Others

and shortened platelet survival have been described.¹⁰ The May-Hegglin anomaly is an inherited abnormality of autosomal dominance which features round, blue-staining Döhle bodies in the cytoplasm of the leukocytes, giant platelets up to 15 microns in diameter, and chronic thrombocytopenia.¹¹

The acquired disorders of deficient platelet production include those associated with bone marrow damage due to the myelosuppressive drugs or to ionizing radiation, myelofibrosis, myelophthisic anemias, leukemias, or chronic refractory anemias. Paroxysmal nocturnal hemoglobinuria is primarily a disease of the red cell membrane but may be associated with bone marrow aplasia and hence thrombocytopenia.

The megaloblastic and hemolytic anemias, if severe, may also be associated with impaired platelet production. Resulting in thrombocytopenia on the basis of abnormal distribution are those entities causing congestive splenomegaly. Platelets are consequently trapped within the spleen and the entities include splenomegaly associated with cirrhosis of the liver, thrombosis and other forms of obstruction of the splenic vein, and Banti's syndrome. Splenectomy is the treatment of choice.

The disorders of platelet destruction can be classified as immune, consumptive, or damaging. Of the immune types, isoimmune thrombocytopenic purpura of infancy is due to fetal-maternal platelet incompatibility analogous to fetal-maternal red cell incompatibility.¹² The mother's IgG antiplatelet antibody crosses the placenta and destroys the infant's platelets.



Hematology staff members review bone marrow slide preparations. The Leitz projecting microscope is shown. Left to right: LCDR T.F. Ryan, MC, USN; CDR R.B. Moquin, MC, USN, Head, Hematology Branch; LCDR C.L. Gaudry, MC, USN, Pediatric Hematologist; LCDR R.F. Granatir, MC, USN, First Year Hematology Fellow, and; CDR E. Perlin, MC, USN, Second Year Hematology Fellow.

Idiopathic thrombocytopenia purpura is also a result of increased platelet destruction due to the presence of an antiplatelet antibody.¹³ Presenting an identical clinical picture, and probably due to an immune mechanism in most cases, are those types of thrombocytopenia induced by drugs of which Wintrobe lists 36 examples,¹⁴ and those associated with systemic lupus erythematosus, the Evans-Duane syndrome (autoimmune hemolytic anemia and thrombocytopenia) and the lymphoproliferative disorders. Of course, in the latter group of diseases, thrombocytopenia may also be due to hypersplenism or to marrow replacement. The thrombocytopenia of infectious mononucleosis may be on an immune basis, also.

The conditions inducing a consumption coagulopathy are protean and will not be reviewed here. Thrombotic thrombocytopenia purpura is a vasculitis

and probably causes thrombocytopenia because of intravascular coagulation, although other factors may also play a role. The hemolytic-uremia syndrome in children may represent a special case of intravascular coagulation. Congenital hemangiomata (the Kasabach-Merrit syndrome) was first described in 1940.¹⁵ The tortuous hemangioma vessels may entrap platelets, clotting factors, and fibrinogen.

Bacteria or more commonly, viruses, may directly damage the platelet,¹³ although the mechanism is not clear.

The viruses most commonly associated with thrombocytopenia are those of measles, rubella, varicella, smallpox, mumps, and hepatitis. Postvaccinal thrombocytopenia is probably more common than we realize. Cytomegalic inclusion virus infection may cause low platelets in the newborn infant.

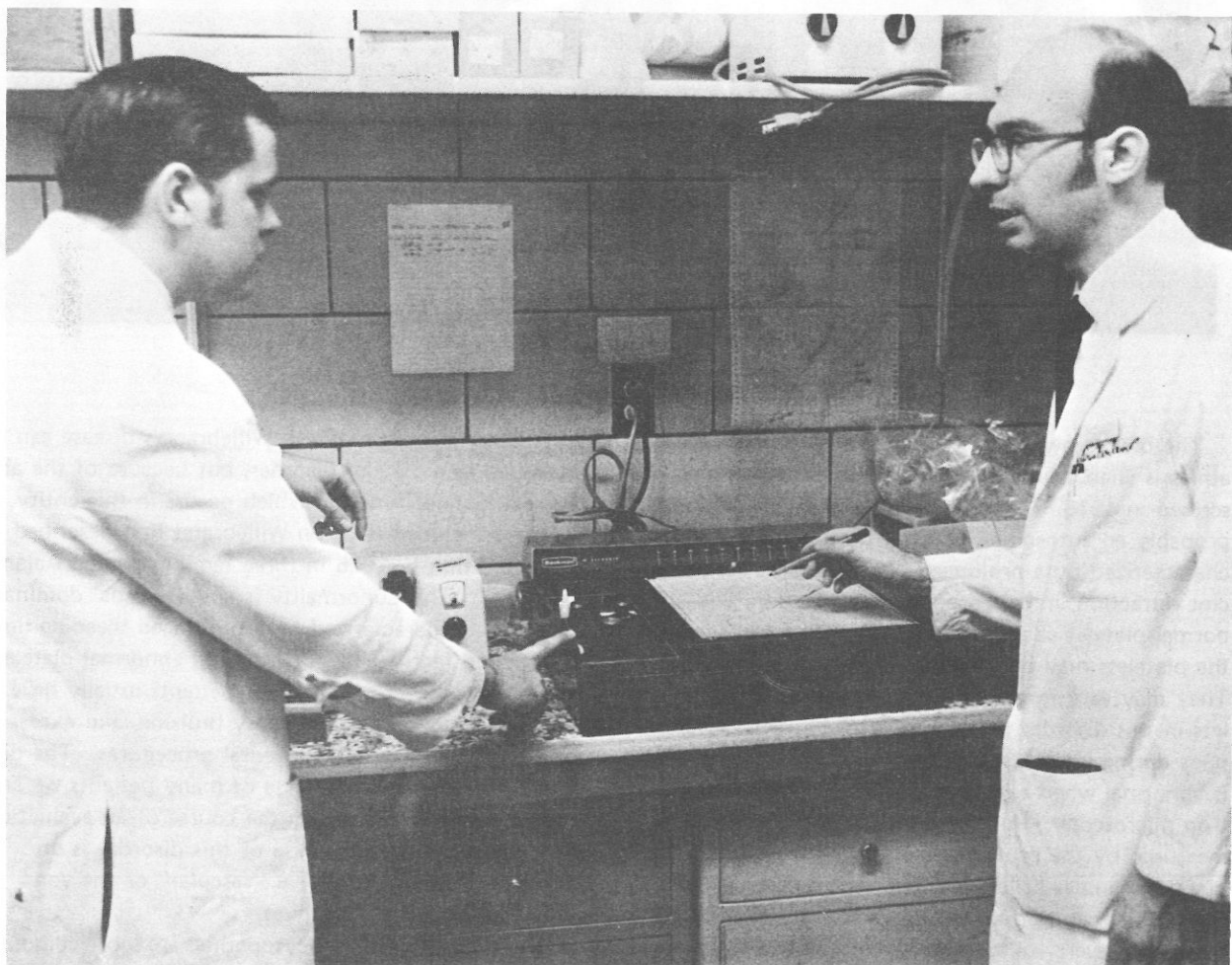
II. The Thrombocytoses

Autonomous production of platelets may occur in polycythemia vera, primary thrombocythemia, the rare disorder of megakaryocytic leukemia, and chronic myelogenous leukemia. In thrombocythemia the average megakaryocyte volume is greater than normal.⁴ The platelet in essential thrombocythemia may aggregate poorly in response to ADP (adenosine diphosphate) or to epinephrine, thus indicating that the platelet is qualitatively abnormal.¹⁶ This platelet function may account for the seemingly paradoxical bleeding that one may see in this disorder. Any severe stress to a person can increase release of platelets from the bone marrow but various types of inflammation, iron deficiency anemia, blood loss, and splenectomy are probably the most commonly recognized secondary causes of thrombocytosis. Thrombocytosis following splenectomy may be delayed 10 to 14 days postoperatively. The throm-

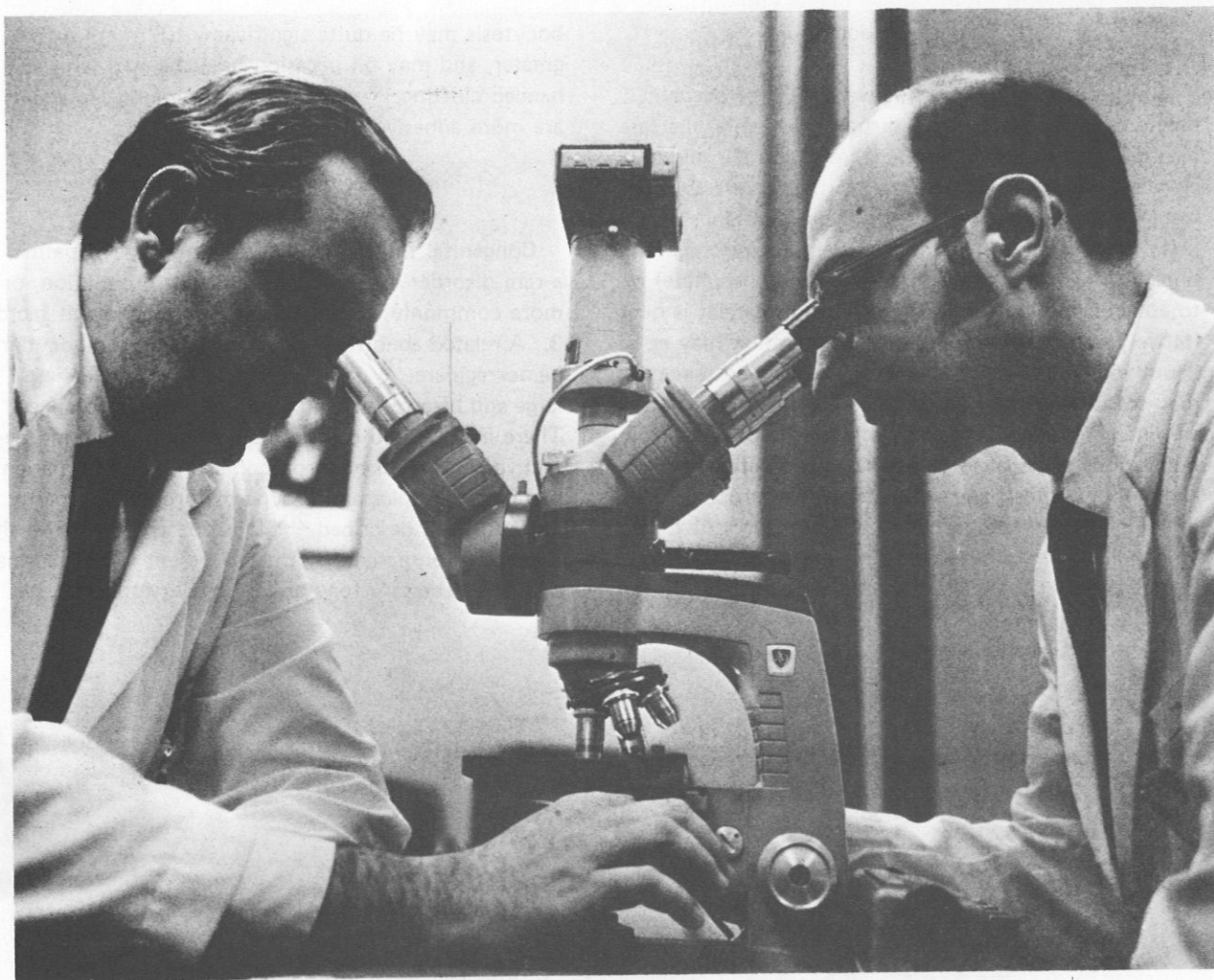
bocytosis may be quite significant, $10^6/\text{mm}^3$ or greater, and may on occasion be associated with enhanced clotting,¹⁷ perhaps because younger platelets are more adhesive.¹⁸

III. The Thrombocytopathies

Congenital thrombopathia (or thrombocytopathia) is a rare disorder due to either deficient production, or more commonly, to impaired release of platelet factor 3. A related abnormality is dystrophie thrombocytaire hemorrhagique.¹⁹ In this disorder the platelets are large and bizarre, and the bleeding time is prolonged. There is decreased prothrombin consumption and defective generation of thromboplastin from the patient's platelets. A "plasmatic" type of thrombocytopathy has also been described.²⁰ It is due apparently to the absence of an activity normally present in the plasma which is necessary for normal platelet function.



CDR Perlin (right) describes the results of a platelet aggregation study to LCDR Granatir.



CDR Moquin (left) and CDR Perlin review a peripheral blood smear.

The best known of the congenital thrombocytopathies is Glanzmann's disease (thrombasthenia) first described in 1918.²¹ It affects both sexes equally and is probably an autosomal recessive trait. This disorder is characterized by a prolonged bleeding time, abnormal clot retraction, impaired platelet aggregation, and abnormal platelet adhesiveness.²² In peripheral smears the platelets may be isolated rather than clumped. They may vary in size and shape. In addition, platelets in this disorder fail to spread and extend pseudopods during viscous metamorphosis. Their morphology is abnormal when examined either by light or by electron microscopy. Poor platelet factor 3 activity is measured by the prothrombin consumption test. The platelet granules have been reported to contain less fibrinogen than normal.²³ Patients with this disorder may have severe subcutaneous bleeding and bleeding of the mucous membranes early in life but this tendency may decrease with age.

It is not certain that von Willebrand's disease can be classified as a platelet disorder, but because of the abnormal platelet function which occurs in this entity, we have included it. Von Willebrand first described this condition in 1926 in three families on the Aaland Islands.²⁴ This abnormality is an autosomal dominant trait and is characterized by a prolonged bleeding time, diminished factor VIII activity, and abnormal platelet adhesiveness.²⁵ Clinically, the patients usually have skin and mucosal bleeding, easy bruising, and excessive bleeding after trauma and dental procedures. The diagnosis was made in the case of many patients we are seeing in our clinic, during the course of an evaluation for menorrhagia. The cause of this disorder is unknown and the search for a "vascular" or the von Willebrand's factor continues.

The acquired thrombocytopathies are more common. The best known is one which occurs in uremia where, in addition to thrombocytopenia, one may find

increased bleeding time, decreased platelet adhesiveness, defective platelet factor 3 activity, and poor clot retraction. Recently,²⁶ an inhibitor of platelet aggregation has been found in uremic plasma, guanidosuccinic acid, which appears in excessive quantities perhaps due to faulty enzymatic activity in the diseased kidney. Hypermagnesemia may also be responsible for the impaired aggregation.²⁷

The thrombocytopathy that occurs in macroglobulinemia is probably due to the coating of the platelet by the abnormal protein, impairing platelet adhesiveness and aggregation. In addition to the thrombocytopenia that occurs in acute alcoholism which may be due to megakaryocytic depression, folic acid deficiency, or any of various forms of metabolic inhibition, defective platelet aggregation may be present in patients with cirrhosis perhaps secondary to excessive circulating fibrin split products.²⁸

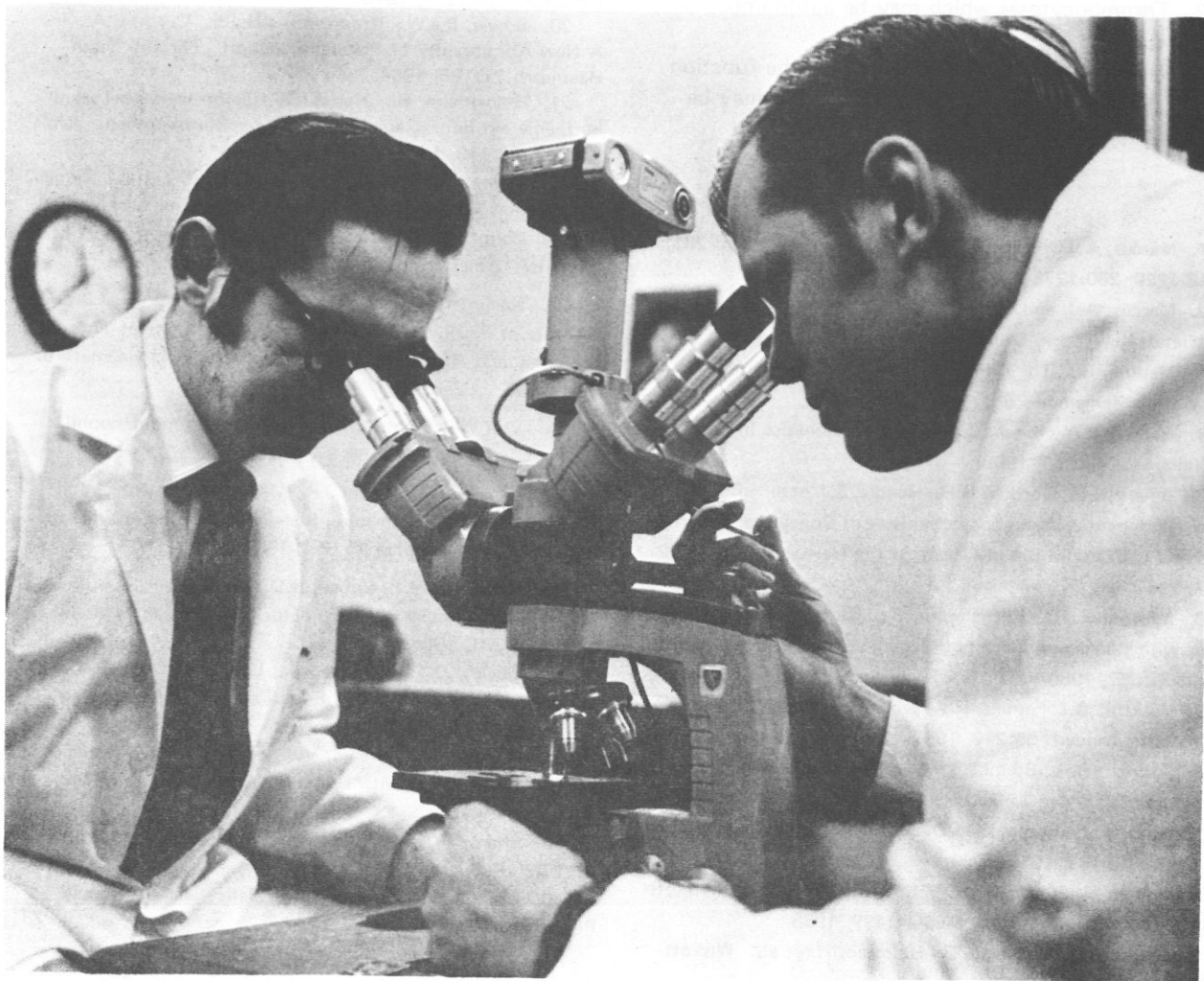
In multiple sclerosis there occurs enhanced platelet

adhesiveness that appears to be related to the activity of the disease.²⁹ The cause is not yet determined.

Of the acquired abnormalities of the platelet, probably the most common is that related to aspirin ingestion. Acetylsalicylic acid seems to prolong the bleeding time by inhibiting the release of ADP from the platelet, thus abolishing the second wave of platelet aggregation.³⁰ The effect of taking 1.8 Gm of aspirin will still be detectable in aggregation tests performed four to seven days later.¹

Therapy

Obviously, a patient with a platelet disorder should not take aspirin. Adequate substitutes are plain Darvon (propoxyphene hydrochloride), Tylenol (acetaminophen), or sodium salicylate (the acetyl group is necessary for the impairment of platelet aggregation.) In the platelet deficiency diseases, the treatment is, of



LCDR Ryan (left) and LCDR Granatir review a bone marrow preparation.

course, platelet infusions when indicated for bleeding diatheses. In those patients who will require long term platelet replacement, such as those patients who have aplastic anemia, recent evidence suggests that the platelet donor ideally should be histocompatible with the recipient to avoid the early inducement of antiplatelet antibodies.³¹

Essential thrombocythemia and the other myeloproliferative diseases may require radioactive phosphorus or other myelosuppressive therapy. Fresh frozen plasma will correct the bleeding tendency in von Willebrand's disease.

Summary

The platelet disorders can be divided into three main categories:

1. Thrombocytopenias due to either disorders of production, disorders of distribution, or to disorders of destruction;
2. Thrombocytoses which may be autonomous or reactive, and;
3. The thrombocytopathies, in which the function of the platelet itself is defective. The latter may be either congenital or acquired.

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ABSTRACTS AND REVIEWS

SALMONELLOSIS — UNITED KINGDOM

USDHEW PHS NCDC Morb & Mort Wkly Rep
20(15):137, 142, Apr 17, 1971.

When introduced into a hospital ward, salmonellosis, usually a food-borne infection, may spread by a variety of other means, becoming a serious and sometimes intractable problem. This is illustrated by two recently reported outbreaks, one in an orthopedic unit and one in a maternity unit.

The orthopedic unit consisted of a female ward with ten beds and a male ward with 12 beds, separated by a corridor, but sharing the same nursing and domestic staff. *Salmonella panama* was first isolated from the stool of a female patient with diarrhea. About one month earlier, a male patient who had been on the ward for a week, developed diarrhea that lasted for one week. No pathogen was isolated from any of his stool specimens, and the symptom was attributed to antibiotic therapy. This patient was incontinent of feces and difficult to nurse. A disturbance to the other patients, he had occupied several temporary residences at night, including the female side-ward, before being permanently accommodated in the male side-ward. He was identified as the principal disseminator of infection in this outbreak, since swabs of the floor, window-ledge, and curtains about his original ward bed yielded heavy growths of *S. panama*. The organism was also isolated from several other sites in both wards, the sluice and cleaning equipment, the kitchen sink drain, a wash mop, and the outside of a tin of biscuits.

Stool specimens from all patients and staff members on the ward were examined and led to the detection of six cases and ten asymptomatic carriers. In addition, inquiries revealed that a patient who had been discharged about the time that the first male patient had become ill, was admitted to an infectious disease hospital two days later with diarrhea due to *S. panama*. Examination of stool specimens from patients in other wards yielded *S. panama* from a child in the pediatric ward with diarrhea of recent onset and from an asymptomatic carrier in a surgical ward. All other hospital staff were examined, and five members were found to be infected. Two elderly female orthopedic patients died; salmonella septicemia was reported as the cause of death in one patient and was a contributory cause in another.

The original source of infection was not detected, but the incident shows how widely salmonellae may become disseminated when an infected patient with diarrhea is not isolated. There is also the need for caution in interpreting a negative bacteriological report on a specimen obtained from a patient receiving or recently treated with antibiotic therapy.

In the second outbreak, *S. panama* was first isolated from an eight-day-old baby with loose stools, in the premature baby unit of a general hospital. Two more cases involving four- and five-day-old babies respectively, followed within the next few days. No isolation was made from the mothers or five other babies in the unit. The unit was closed for cleaning and disinfection.

In the next two weeks, *S. panama* was isolated from stool specimens obtained from six babies in the main maternity nursery. Most of them had diarrhea, sometimes tinged with blood. At this point, the whole unit was closed to new admissions. Cultures of swabs from all staff, patients, and the environment were reported negative except for one maternal excreter of *S. panama*. Samples taken from the milk kitchen were all negative. Sterile disposable catheters were in use for aspirating babies, but it was then found that a plastic adaptor which connected the catheter to the suction tube of a portable vaporizer, yielded a profuse, pure growth of *S. panama*; the proximal rubber tubing was also heavily infected. This machine had apparently been used on four of the most recently infected babies, but could not account for all cases. Two wall suction tubes in the labor ward were then shown to be heavily contaminated with the same organism. These tubes had been used for both mothers and babies and did not appear to have been disconnected and cleaned after use.

Only one of the infected babies in the premature unit had possibly been exposed to a contaminated aspirator, suggesting that cross infection may also have played a part in this outbreak, as often happens in such circumstances.

All these babies exhibited only negligible to moderately severe diarrhea. However, two babies born in the unit the previous month became ill after their return home. One died of *S. panama* meningitis; *S. panama* was found in the blood, and cerebrospinal fluid of the other child who is now recovering. Further inquiries showed that infection was even more

widespread than had appeared. Seven other babies delivered at the maternity unit were admitted from their respective homes to the infectious disease hospitals and were found to be infected with *S. panama* over a period of several months. *S. panama* is a common serotype generally and was known to be present in the locality. Some babies who were ill at home may have been infected outside the hospital, but it seems likely that most of them and of those found in hospitals, were infected by the suction tubes or by cross infection in the unit. Disposable catheters, tubes, and connecting pieces have now been introduced and unnecessary use of mechanical suction curtailed.—Code 72, BUMED. 🍄

LAPAROSCOPY, CULDOSCOPY

AND GYNECOGRAPHY:

Techniques and Atlas

Melvin R. Cohen, M.D., W.B. Saunders Co., Philadelphia, Pa., 1st Ed., 1970, 171 pages, 109 illustrations, \$11.00.

This excellent book should be read by everyone participating in or learning endoscopic visualization of the peritoneal cavity. The purpose of the book is to serve as an effective tool with which to teach endoscopic techniques, with emphasis on laparoscopy.

The chapters on the historical background, techniques, anesthesia, equipment, indications and contraindications of laparoscopy are outlined and discussed in an easily understood and concise manner. The book contains one chapter on culdoscopy and culdoscopic photography, and one chapter on gynecography. The author also discusses culdoscopy versus laparoscopy, outlining the advantages and disadvantages of each procedure. The last chapter of the book contains an atlas of 49 photographs obtained during laparoscopy and culdoscopy which should serve as an excellent orientation for the neophyte endoscopist.—CAPT Frank S. Billingsley, MC, USN. 🍄

PROGRAMMED INSTRUCTION

WITH MICROFICHE:

Introduction to the Slide Rule

Microfiche applications are increasing rapidly, and it is believed certain to become a valuable aid in teaching. The purpose of this study was to examine the feasibility of using microfiche as a means of programmed self-instruction. Lessons adapted from a one-hour lecture

on the slide rule were typed in large print (six characters per inch) in order to allow easy reading at distances normally used with microfiche readers. The 58 pages of the course were reproduced on microfilm, strips of which were then inserted into clear plastic microfiche jackets. The complete course was duplicated on single diazo sheets, which were available for distribution. Sources of supply of all equipment and materials, details of the procedures employed, and a sample diazo sheet of the course were included in the report. Acceptability and effectiveness of the programmed course were evaluated by two groups of students divided according to prior knowledge of the slide rule. Results indicated that utilization of microfiche for self-instruction is feasible, but that it is most effective when employed as a reinforcement or supplement to classroom tutelage.—Abstract by Research Work Unit MR005.20-6052 by CAPT L.W. Wachtel, MSC, USNR. 🍄

THE DOCTOR'S SHORTHAND

Frank Cole, M.D., W.B. Saunders Co., Philadelphia, Pa., 1st Ed., 1970, 179 pages, \$4.50.

This convenient little handbook should improve the disposition and efficiency of any secretary who transcribes handwritten medical notes or prepares medical reports. So long as alphabetical letters continue to stand for multiple tests, diseases, and substances in common parlance, confusion will endure in applying the precise meaning intended by the user. This listing is quite complete and useful. The physician who persists in employing these abbreviations should either be made to supply his typist with a copy, or read the material that emerges from the typewriter. (Please send to Editor, Care of MACDUFF.) 🍄

U.S. NAVAL HISTORY SOURCES IN

THE WASHINGTON AREA AND

SUGGESTED RESEARCH SUBJECTS

Compiled by Dean C. Allard and Betty Bern. Naval History Division, Office of the Chief of Naval Operations, Navy Dept., Washington, D.C., 3rd Ed., revised and enlarged. May be obtained for \$1.00 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. L. C. Card 77-608391.

This attractive publication seeks to aid scholars and naval history writers by identifying archival, manuscript

(Continued on p. 19)



SERVICE COLLEGES

Career patterns for medical officers is a subject of vital interest to each of us. In many ways, an individual officer's career pattern is a personal option greatly influenced by the individual desire of the officer. Professional qualifications are a major factor in the selection and assignment of medical officers to clinical billets at all levels of the officer's career. Assignment to a residency training hospital as the Chief of Service, for example, requires that an officer be board certified in his specialty. In addition to the requirement for medical specialists, there is a continuing need for physician administrators to serve on top level staffs throughout the world. Staff jobs can be a one-tour only or a multi-tour assignment consistent with the preference of the officer. Staff assignments place an officer in the mainstream of Navy planning and can be one of the most rewarding and satisfying tours of a Navy career.

Preparation for a senior staff job is difficult for a medical officer who has spent the first ten or more years of his naval career in residency training, clinical assignments, and preparation for specialty board examinations. Still, the Navy needs physicians qualified to serve in an advisory capacity to line commanders as staff medical officers. The best method available to gain the prerequisite qualifications for assignment to staff billets, executive officer and commanding officer billets, is through attendance at one of the service colleges. Medical officers are eligible to attend the Industrial College of the Armed Forces, Naval War College (Command and Staff Course), Marine Corps Development and Education Command - Command and Staff College, and the Armed Forces Staff College.

Service College Selection Boards meet each spring to select the best qualified candidates to attend courses

the following year. (The May 1971 selection board considered candidates for FY 73. A second session of this board is planned for October or November 1971). Application for service college attendance may be made by individual letter request to BUMED or by completing the appropriate section of an officer preference card at the time of annual submission. It is requested that applications be made by those interested no later than 15 September 1971.

The following brief descriptions of courses available to medical officers are provided as a guideline. Additional information may be obtained by addressing inquiries to BUMED Code 31.

Industrial College of the Armed Forces

Location: Washington, D.C.

Convenes: Annually, in August, 10 months duration

Eligibility: Officers with 16-25 years commissioned service. (Applications desired from officers in year groups 52-57). Quota available: one, annually.

Content: Course of study in the economic and industrial aspects of national security and in the management of resources under all conditions. Due consideration is given to the interrelated military, political and social factors affecting national security, both in the context of national and world affairs. The course enhances the knowledge of military officers and key civilian personnel for important command, staff, and policy-making positions in the national and international security structure.

Naval War College - Command Staff Course

Location: Newport, R.I.

Convenes: Annually in August, 10 months duration

Eligibility: Officers with 10 to 15 years commissioned service. Applications desired from officers in year groups 57-63. Quota available: one, annually.

Content: Course provides naval officers with advanced education in the science of naval warfare and related subjects in order to improve their professional competence for higher responsibility. Included in the instructions are courses in the fundamentals of joint and combined operations, international affairs, international law, international organizations and international relations.

Marine Corps School - Command and Staff College

Location: Quantico, Va.

Convenes: Annually, in August, 10 months duration

Eligibility: Generally, officers with 10-15 years commissioned service. Applications desired from officers in year groups 57-63. Quotas available on an "as needed" basis.


Content: Course is designed to exercise and develop judgment and decision-making capacities through academic work in which the student is exposed to type situations and problems normally encountered by senior officers serving in either command or staff positions. Major emphasis on amphibious operations.

Armed Forces Staff College

Location: Norfolk, Va.

Convenes: February and August, 5 months duration

Eligibility: Officers with 10-16 years commissioned service. Applications desired from officers in year groups 53-63. Quota available: two per year (One February, one August).

Content: Course of study in joint and combined organization, planning and operations, and in related aspects of national and international security, in order to enhance the preparation of selected military officers for duty in all echelons of joint and combined commands.—CAPT R.K. Barton, MC, USN; Director Professional Division, BUMED, Code 31. 

PHYSICIANS' ASSISTANT TRAINING FOR HOSPITAL CORPSMEN*

FM: CNO

TO: NAVOP

REF: A. TRANSMAN

B. BUPERSINST 1510.107A of 29 Aug 1969

1. Purpose of this message is to announce forthcoming implementation of a Physician's Assistant Training Program for selected hospital corpsmen.

2. This program will provide special training in order to qualify a select group of hospital corpsmen to

become designated physician's assistants. Personnel qualified and selected for the program will receive a 12 month preceptorship in health care services at a naval hospital. The first class of students is scheduled to convene in September of 1971.

3. Physician's assistants will function under the direct supervision and responsibility of a medical officer in the areas of:

a. Conducting screening types of routine examinations.

b. Recording patient's history and other pertinent patient data.

c. Ordering and coordinating special diagnostic studies.

d. Instructing patients in home care procedures.

e. Supervising administrative work which requires medical insight.

f. Carrying out such other clinical procedures as the assistant's training will permit him to undertake under the direction of a medical officer.

4. Personnel selected for this program at the E-5 and E-6 level, who have successfully passed the advancement examination to the next higher pay grade or who do so during the preceptorship training, will be automatically advanced one pay grade upon completion of the preceptorship. Completion of preceptorship training will be followed by a two year apprenticeship period in training.

5. A warrant officer specialty will be established. Selection to warrant officer will be made during the latter part of the apprenticeship. Personnel failing selection to warrant officer will be utilized in duties commensurate with their training and proficiency. Details of the warrant officer program will be promulgated separately ASAP.

6. Applicants for this program must meet the following eligibility requirements:

a. Be a volunteer, male or female, with required obligated service in accordance with reference (a) for the 12 month preceptorship training period.

b. Be a high school graduate and in addition, have completed two or more years of college level training from a regionally or nationally accredited institution with a minimum of eight credits in biomedical sciences and six credits in mathematics.

c. Have a minimum navy test score GCT - 55, ARI - 55.

d. Be a graduate of Navy Medical Department Class "A," "B" or "C" Schools with a total of at least 34 weeks of classroom training.

e. Be in pay grade E-5 or above with the below active service time:

*Received for publication 5 May 1971.

	<i>Minimum</i>	<i>Not More Than</i>
E-5	4 yrs	6 yrs
E-6	6 yrs	10 yrs
E-7	8 yrs	12 yrs
E-8	11 yrs	14 yrs
E-9	13 yrs	16 yrs

f. Present evidence through an interview process of personal attributes necessary for providing quality patient care.

g. Commanding officers forwarding endorsement of requests for enrollment should include a detailed statement concerning the applicant's ability to meet the public and to develop rapport with patients.

7. Applications from qualified personnel are to be submitted to BUMED (Attn Code 34) following the general format contained in enclosure (1) to reference (b). Applications must be received not later than 15 Jun 1971. Selectees will be notified of acceptance to the program by individual letter.

8. The implementation of a physician's assistant program to assist in providing the best possible health care service to our navy family is an extremely important new concept. The fullest cooperation of commanding officers in assessing each applicant's motivation and potential is required. ☸

RESIDENCY TRAINING POSITIONS AVAILABLE

Commencing during the summer of 1971, the following residency training positions will be available in Naval Hospitals at the locations indicated below:

- Anesthesiology – Philadelphia, Pa.
- Family (General) Practice – Camp Pendleton, Calif.
- Pathology – National Naval Medical Center, Bethesda, Md.; San Diego, Calif.
- Psychiatry – National Naval Medical Center, Bethesda, Md.; Oakland, Calif., and; Philadelphia, Pa.

Application procedures for these positions are outlined in BUMEDINST 1520.10E. For further information, write or call Bureau of Medicine and Surgery, Training and Clinical Services Branch (Code 316), Navy Dept., Washington, D.C. 20390. Phone: (202) 254-4280/81. ☸

FORMULARY NOTES

"Possibly Effective" Drugs

Probably no other category of drugs creates as much confusion as those classified "possibly effective" by

the National Academy of Sciences/National Research Council (NAS/NRC) Study on Drug Effectiveness. Several of the drugs in this group have no counterparts in other efficacy categories. For this reason, BUMED has authorized Pharmacy and Therapeutic Drug Committees (P&T) to override the procurement prohibition if no alternative form of therapy exists (BUMEDNOTE 6710 of 26 Feb 1971).

As was expected, leading clinicians and pharmacologists have begun to discuss the NAS/NRC Study in medically-oriented publications and professional journals. Their views and interpretations will have significant impact on the ultimate attitude of the profession toward the study findings. In the interim, the Food and Drug Administration (FDA) must accept the weight of evidence as presented to and evaluated by participants in the Study, and direct appropriate regulatory action. Thus, the P&T Committee starts its own considerations in the face of a *prima facie* determination on efficacy by a quasi-official study group and a pending order by FDA.

Quite clearly, the BUMED-granted exception regarding procurement of "possibly effective" products is not to be viewed as a mandate to ignore the NAS/NRC Study, but as a recognition of the clinical and scientific expertise inherent in the membership of a typical P&T Committee. It constitutes an exhortation for the Committee to assess objective scientific data as opposed to custom or personal preference, to exercise mature professional judgment and leadership, and, with the approval of the commanding officer, to direct such action as is in the best interest of the patients and the command.

Unclassified Products

A parallel, but equal frustration exists when considering drug products not yet reported by FDA, or pending classification by NAS/NRC. Drugs which are obviously individual entities, and are not closely related to those already classified require little extra attention at this point. P&T Committees must, however, screen most carefully those agents as yet unclassified which are chemically, pharmacologically and therapeutically analogous to others already reported. Logically, such closely related items could be grouped with those classified, unless contrary evidence is available to the P&T Committee.

Whatever the determinations of local P&T Committees, it becomes increasingly important that documentation fully supporting the decision is available for review.----CAPT Lay M. Fox, MC, USN; Chairman, BUMED Formulary Review Committee, Naval Hospital, NNMC, Bethesda, Md. ☸

OFFICIAL INSTRUCTIONS AND DIRECTIVES

FM: SECNAV

TO: ALNAV (15/71)

Subj: Higher Education Loans

1. I am concerned that sons and daughters of our officers and men may be foregoing or delaying higher education because of the severe financial strain it would impose upon their parents. Parents in many cases are financially totally unable to provide higher education for their children. I believe that all dependent children of our active duty personnel who are qualified for admittance should be financially able to attend college or vocational training beyond the high school level. There is an under-publicized opportunity available to the sons and daughters of our service members.

2. The Navy Relief Society which is the fraternity of every Navyman and Marine has a program of no interest higher education loans and is prepared to receive an influx of applications. Loans are made without interest and generally limited to \$1,250 per student per year with a total of \$5,000 for complete course of study. In each case the willingness and ability of the student to help himself financially and the reasonable degree of financial help available from the parents (without going into debt) are factors that are considered in making the loan. Repayment is expected to start within six months after termination of studies and may be made in a lump sum or spread out in monthly payments over a period of years.

3. Requests for information outlining the program should be addressed to the Navy Relief Society, 1228, 801 North Randolph St., Arlington, Va. 22203. The deadline for the completion of applications is 15 March, annually.

SECNAV INSTRUCTION 6710.1B OF 2 MAR 1971

Subj: Illegal or Improper Use of Drugs

This instruction implements the policies and procedures for personnel of the Department of the Navy as prescribed by DoD Directive 1300.11 of 23 Oct 1970.

MANUAL OF THE MEDICAL DEPARTMENT

Change 63, 1 March 1971

a. Amplifies article 6-2 to show that the Assistant Chief for Dentistry and Chief of the Dental Division is also the Chief of the Dental Corps.

b. Updates section II of chapter 6 on organization

of the Dental Division.

c. In 6-59 (1) reflects a recent title change for the dental officer on the staff of the Commandant of the U.S. Marine Corps to The Dental Officer, U.S. Marine Corps.

d. Updates 6-115 (5); 6-117 (1)(n), (2)(f), and (3)(a), (e) and (f); and 6-118 on abbreviations and markings for, and illustrations of, SF 603, Dental.

e. In 6-150 (Dental Service Report) adds new requirement for reporting plaque control procedures in item 43.

f. Updates Chapter 7, Medical Service Corps, articles 7-1 (2), 7-2 (2), 7-6 (1), and the title of 7-9 (1)(e).

g. Brings current Chapter 12, Special Treatment Facilities.

h. In 14-52 reflects change of title for the Staff Medical Officer, Headquarters USMC, to The Medical Officer, U.S. Marine Corps.

i. Updates 15-24 (2)(f), 15-25A (2)(a), 15-27-2-39f (footnote), 15-30 (1)(l), and 15-48 (5)(c), (3)(b) and (c) concerning venereal diseases.

j. In 15-45 (5)(e), 15-45A (5), 15-57 (5)(b) and (6), 15-77 (2)(b), 15-90 (2) and (4), and 15-90 (6)(b) and (f)(4) eliminates the annual chest X-ray program for tuberculosis control in favor of the tuberculin (Mantoux) skin test.

Change 64, 1 April 1971

a. Revises article 1-3 to reflect recent changes in the organization of the Bureau of Medicine and Surgery.

b. In 6-108, eliminates requirement for sending a copy of a replacement SF 603 dental record to BUMED, and deletes word "account" from references to the social security number.

c. Changes 6-130 (4) application cut-off date from 1 December to 1 August for postdoctoral fellowships, graduate courses at the Dental School, and residency training at naval facilities.

d. Updates 15-27 on physical standards for induction, enlistment, and reenlistment of males (chap. 2 of Army Regulations 40-501).

e. In 15-29, for submarine duty, lowers the visual standards and modifies requirements for refractive error and cylindrical correction, and updates the standards for the respiratory system.

f. In 15-29A and 15-29B, for the nuclear programs, modifies the visual standards.

g. Adds 15-59 (8) on sickle cell testing of suspect aviation program candidates.

h. Updates 16-27 (1) on notifying BUMED of a lost or destroyed Health Record.

i. In 16-29 substitutes social security number (SSN) for social security account number (SSAN).

BUMED NOTICE 6600 OF 19 FEB 1971

*Subj: Dental Health Questionnaire,
NAVMED 6600/3*

Announces standardization of a Dental Health Questionnaire to replace the numerous local forms now in use. This questionnaire shall be filled out by/for each patient and reviewed by a dental officer prior to rendering dental care. It shall become part of the Dental Record and shall be maintained in the Dental Folder, DD 722-1, for reference and subsequent use in routing/treatment plan notations.

BUMED NOTICE 6700 OF 15 MAR 1971

*Subj: Mechanical Resuscitators:
BUMED Policy Concerning*

In consonance with the policies of the National Research Council Academy of Sciences, BUMED has determined that the bag, mask and nonbreathing valve combination such as found in the AMBU or HOPE model manual resuscitator has made the mechanical oxygen powered resuscitators obsolete for emergency resuscitation.

Chief, Field Branch, BUMED, shall delete mechanical oxygen powered resuscitators from all authorized allowance lists including emergency vehicle equipment requirements and substitute one each of FSN 6515-018-9494 Resuscitator, Hand Operated, and 6515-890-1818 Resuscitator and Aspirator, for each resuscitator deleted. BUMED is taking additional action to standardize a mechanical demand valve which may be used with the oxygen therapy accessory items.

The usual rate of administering oxygen through the flowmeter and bag, mask unit is five liters per minute. This enriches the inhaled air to approximately 40-50 percent oxygen and will produce adequate arterial oxygen levels in all patients in whom resuscitation prognosis is reasonable.

Activities are authorized to continue using the oxygen powered resuscitator until sufficient quantities of manual bag, mask units are on board but complete changeover must be accomplished prior to 1 Sept 1971. Oxygen powered resuscitators shall be surveyed and disposed of as excess.

BUMED NOTICE 10110 OF 13 APR 1971

*Subj: Commuted Rations for Enlisted
Patients in Certain Cases*

Announces the policy that enlisted patients who live and subsist at home while undergoing minimal care in hospitals be permitted to be paid the commuted ration rate in cases recommended by their ward medical officer, concurred in by the Chief of Service and approved by the Commanding Officer. This is not intended to affect the patients who spend most of the day at the hospital and are granted normal liberty at night and on weekends. ☘

AMERICAN BOARD CERTIFICATIONS

American Board of Dermatology

LCDR Charles S. Eby, MC, USNR

American Board of Internal Medicine

CDR Daniel A. Mauring, MC, USN

LCDR John E. Lent, MC, USNR

LCDR William G. Nevel, MC, USN

American Board of Obstetrics and Gynecology

LCDR Robert L. Gibbs, MC, USN

LCDR Ernest M. Wood, MC, USN

American Board of Ophthalmology

CDR Kenneth J. Faust, MC, USN

American Board of Orthopaedic Surgery

CDR Robert G. Winans, MC, USN

American Board of Otolaryngology

LCDR Robert P. Majors, Jr., MC, USN

LCDR Russell S. Weeks, MC, USNR

American Board of Pathology

LCDR Calvin Marantz, MC, USN

LCDR Philip J. Vogt, MC, USN

American Board of Pediatrics

LCDR Alan A. Alexander, MC, USNR

LCDR Edwin G. Brown, MC, USN

LCDR Wilbur F. Eich, MC, USN

LCDR William L. Gill, MC, USN

LCDR Franklin X. Loeb, MC, USN

American Board of Psychiatry & Neurology in Psychiatry

CDR John F. McGrail, MC, USN

LCDR Ronald E. Bullock, MC, USN

American Board of Radiology

CDR John P. Smith, MC, USN
LCDR Kenneth J. Billings, MC, USN
LCDR Collius D. Brown, MC, USNR
LCDR Dudley K. Campbell, MC, USN
LCDR Kenneth R. Davis, MC, USNR
LCDR Jacob W. Meighan, MC, USN

American Board of Surgery

CDR Joseph P. Barreca, Jr., MC, USN
CDR William E. Carson, MC, USN
CDR Robert B. M. DeLisser, MC, USN
CDR Philip K. Swartz, Jr., MC, USN
LCDR Charles S. Brown, MC, USN
LCDR Donald L. Caress, MC, USNR
LCDR Jehan Z. Mir, MC, USNR
LCDR Dean E. Sorensen, MC, USN

American Board of Thoracic Surgery

LCDR Marion R. Lawler, Jr., MC, USNR

Subspecialty Board of Gastroenterology

CDR Erwin L. Burke, MC, USN

AWARDS AND HONORS

Silver Star Medal

Hunting, Neil "D", HM2, USN
Reed, Eugene R., HM1, USN
Sink, Darrell T., HM3, USN

Legion of Merit

Miller, Lloyd F., CAPT, MC, USN

Bronze Star Medal

Avenel, Elmer W., HM3, USN
Borawski, Dennis, HM3, USN
Brooks, John A., HM3, USN
Connolly, Gary J., HM2, USN
Darr, Kenneth L., LCDR, MSC, USN
Gantt, Charles B., Jr., LT, MC, USNR
Gregerson, Gary G., LCDR, MC, USNR
Hulbert, Larry A., HM3, USN
Lorenzen, William F., HM2, USN
McKinney, Barry W., HN, USN
Mowry, Charles L., HM3, USN
O'Brien, Richard E., HM3, USN
Poole, Farris W., HMC, USN
Rodriguez, George S., HM3, USN
Trevino, Alfredo V., HM2, USN
Wesley, Louis F., HN, USN
Whitcomb, Mark S., HN, USN

Bronze Star Medal (Con.)

White, Shelton A., LCDR, MSC, USN
Zachmyc, Henry E., HMC, USN

Meritorious Service Medal

Richardson, Richard, CDR, MSC, USN (Ret)
Richter, Tor, CAPT, MC, USN

Navy Commendation Medal

Black, William E., HM3, USN
Borckicky, Richard D., HN, USN
Bradley, Ernest H., HM3, USN
Connolly, Gary J., HM2, USN
Curtis, Robert L., HM3, USN
Fields, James D., HM2, USN
Galapon, Quirino P., HMC, USN
Gray, Norman D., HM3, USN
Holstien, Elmer, Jr., LT, MSC, USN
Irby, Steven K., HN, USN
Irving, Daniel S., HM2, USN
Kelly, Gerald, HMC, USN
Kennedy, Robert S., LCDR, MSC, USN
Kennedy, Spencer B., Jr., HMC, USN
Kivley, Alfred J., HM1, USN
Lawson, Daniel B., HM3, USN
Matlock, Neal G., HM3, USN
Morales, Jose A., HM3, USN
Norris, John C., HM3, USN
Parker, Henry E., LCDR, MSC, USN
Parker, Kelly C., HM1, USN
Pittman, Michael D., HM3, USN
Price, Jerry L., HM1, USN
Rayburg, John L., HM3, USN
Sanders, Douglas R., HM1, USN
Sink, Darrell T., HM3, USN
Smorra, Stanley A., HM2, USN
Sokol, Charles P., HM2, USN
Swafford, James J., Jr., HMC, USN
Weems, Michael G., HM3, USN
Weinerth, John L., LT, MC, USNR

Navy Achievement Medal

Adgate, Frank D., HM3, USN
Ammons, Jimmie R., HMC, USN
Bennett, Kenneth W., HM3, USN
Berzinis, Kenneth W., HM3, USN
Bigornia, Josue T., HM1, USN
Bohlman, Warren E., HM1, USN
Carmichael, John R., Jr., HM3, USN
Chynoweth, James A., HM2, USN
Concepcion, Angel L., HM3, USN
Coulter, Lawrence D., HM2, USN

DOD IMPLEMENTATION OF THE DRUG EFFICACY STUDY

The NAS/NRC Study on Drug Effectiveness, and the resultant FDA regulatory actions are unparalleled in their impact on the practice of medicine and dentistry. Each practicing physician, dentist, and pharmacy officer in the Navy has a personal responsibility to review these data as they become available.

In February 1971, BUMED made distribution of one copy of Formulary Notes to each officer of the Medical Corps, Dental Corps, and Pharmacy Section, Medical Service Corps. Enclosures to the Formulary Notes were as follows:

1. ASD(H&E) memo of 20 Jan 71, Subj: DoD Implementation of the Drug Efficacy Study
2. Classifications for Potassium Penicillin G Tablets
3. FDA list of ineffective drugs of 1 Nov 70
4. FDA list of drugs containing sulfathiazole
5. Listing of ineffective drugs. ☞

INCLUSION OF MEDICAL OFFICER SPECIALTY DESIGNATION IN BUPERS ORDERS

For several years commands have had to rely upon "medical officer specialty chits" to obtain information relative to the specialty or training level of an officer ordered to report for duty. The specialty chit system has proven to be a less than accurate method of providing information to commands and it is an extra piece of paper that BUMED and BUPERS must handle during peak workload periods. Many commands have voiced complaints because of non-receipt of specialty chits, which delays individual command planning. In addition, specialty chits are prepared only on fully trained and board certified officers leaving commands without data on partially trained physicians.

In order to provide specialty information in a timely usable format, a system has been established to include a specialty code in the "Copy to:" portion of BUPERS Orders. For example, the specialty code will work as follows:

Copy to:

NAVHOSP, PORTS, VA (S-PL-3)

The code (S-PL-3) denotes a board certified plastic surgeon.

The new coding system commenced on 26 April 1971. Officer orders processed by BUPERS prior to that date continued the specialty chit system; therefore, during April and May both the new and old system were received. Please give us time to work out

any "bugs" that appear in the new codes. Your suggestions for further refinement of the Medical Corps information dissemination system are solicited. (Medical Corps Branch, Professional Division, BUMED Code 3173).

The following list of specialty codes will be utilized in BUPERS orders:

Specialty	Code
Allergy	M-A
Anesthesiology	S-A
Cardiology	M-CV
Colon & Rectal Surgery	S-PR
Dermatology	M-DS
Gastroenterology	M-GE
General Practice	M-GP
Internal Medicine	M
Neurosurgery	S-N
Neurology	NP-N
Obstetrics & Gynecology	S-OG
Ophthalmology	S-OPH
Orthopedic Surgery	S-OR
Otolaryngology	S-OT
Pathology	
Anatomic	M-PA
Clinical	M-PC
Forensic	M-PF
Pediatrics	M-PED
Physical Medicine & Rehabilitation	M-PTH
Plastic Surgery	S-PL
Preventive Medicine	M-PM
Aviation	M-AVS*
Occupational	M-OC
Public Health	M-PH
Psychiatry	NP-P
Psychiatry, Child	NP-PC
Pulmonary Disease	M-PD
Radiology	M-RA
Surgery	S
Thoracic Surgery	S-TH
Urology	S-U
Military Specialties	
Flight Surgeon	MAVS*
Field Medicine	MFM
Submarine Medicine	M-SUB
Naval Aviator	MAVNA
General Medical Officer	GMO

* "Preventive Medicine, Aviation" and "Flight Surgeon" are both recorded as MAVS; however, "Preventive Medicine, Aviation" will indicate a level of training which distinguishes it from "Flight Surgeon" designation (i.e., MAVS-1 denotes a fully trained officer in "Preventive Medicine, Aviation").

Last Digit of Code Denotes Training Level.

Board Certified	3
Fully Trained	1
Partially Trained	4
Resident	9 ☛

AIRLINES NEED STANDBY FORM

Starting June 1, airlines will be asking for DD Form 1580 along with leave papers when servicemen want to purchase Military Standby and Military Reservation tickets.

The DD 1580 is the military's Authorization for Air Travel. In the past, commercial airlines accepted leave orders or leave papers as a substitute for the form.

If no form is presented, "airline ticket agents will have no recourse but to refuse sale of reduced fare tickets to military personnel," according to officials of the Military Traffic Management and Terminal Service, which monitors the program.

For air travel, fare reductions of two types are offered: The Military Standby Fare and the Military Reservation Fare.

The standby fare permits seats remaining available after all reservations have been claimed to be offered military passengers at approximately half of the applicable fare. The reservation fare, approximately two thirds fare, is accepted in advance of scheduled departure and space is confirmed similar to that for other passengers with full fare reservations.

Military members are eligible for reduced military fares on the following basis:

- On active duty as a member of the Army, Navy, Air Force, Marine Corps or Coast Guard, or a cadet of the respective academies.

- On official leave, pass, liberty, furlough, or within seven days of discharge.

- Traveling at their own expense.

- Traveling in uniform.—Washington, D.C.

(AFPS). ☛

VA REHABILITATION FOR THE BLIND

The Chief Medical Director of the Veterans Administration recently advised Dr. Louis M. Rousselot, the Assistant Secretary of Defense (Health and Environment) of the VA's concern over programs of rehabilitation for blinded servicemen and veterans.

As a result of the VA's interest in this matter, Dr. Rousselot's staff conducted an extensive survey of the VA records concerning blinded servicemen and confirmed that some servicemen who would benefit were not referred to the VA for blind rehabilitation. While

the reasons for failure of referral were not readily apparent from the available data, the study suggested that several factors contribute to the problem. These include:

- a. Patients having other serious conditions requiring active medical care long after their treatment for eye wounds is completed. These patients are being discharged home or to VA hospitals near their homes for further treatment, with either no consideration for, or insufficient encouragement to accept, blind rehabilitation. (The VA's Blind Rehabilitation Centers are also general medical and surgical hospitals.)

- b. Insufficient awareness of the VA program on the part of authorities in military hospitals.

- c. In some instances, even when knowledge of the VA program exists, there has been inadequate presentation to the patient or his family of the benefits to be gained in personal and social adjustment.

Dr. Rousselot has requested that all blinded servicemen in our hospitals be afforded maximum opportunity to obtain the unique benefits available to them in the VA's Blind Rehabilitation Program. Ophthalmologists and other cognizant staff members concerned with the counseling of disabled service members are asked to assist in this effort. Attention is invited to VA Pamphlet 05-48.—Code 33, BUMED. ☛

DOD ABORTION POLICY REVISED

Secretary of Defense Melvin Laird has advised the Military Departments that abortions in military medical facilities in the United States shall be governed by the policy of the state where the hospital is located.

The effect of the new policy is to reverse Service regulations issued last summer, which had liberalized the rules on abortions at military hospitals.

There are about 165 military hospitals which will be affected by the policy modification which was directed by President Nixon.

In a statement issued from San Clemente in April, President Nixon said laws regulating abortion have been the province of the States, not the Federal Government. "That remains the situation today, as one state after another takes up this question, debates it and decides it," he said. "That is where the decisions should be made."

The new ruling was issued to the Service Secretaries in a memorandum by Secretary Laird, who said Service regulations must contain this statement:

"Although Service medical practice is not subject to regulation under State law, it has been determined, as a matter of policy, that in those States where the State criteria on termination of pregnancies are more

restrictive than the above policy, procedures in military facilities in those States shall be in accordance with the more restrictive criteria."

Included in the President's statement was his personal views on the matter, which, he said, "the country has a right to know . . ."

He said:

"From personal and religious beliefs I consider abortion an unacceptable form of population control. Further, unrestricted abortion policies, or abortion on demand, I cannot square with my personal belief in the sanctity of human life—including the life of the yet unborn. For, surely, the unborn have rights also, recognized in law, recognized even in principles expounded by the United Nations.

"Ours is a nation with a Judaeo-Christian heritage. It is also a nation with serious social problems — problems of malnutrition, of broken homes, of poverty and of delinquency. But none of these problems justifies such a solution.

"A good and generous people will not opt, in my view, for this kind of alternative to its social dilemmas. Rather, it will open its hearts and homes to the unwanted children of its own, as it has done for the unwanted millions of other lands."—Washington, D.C. (AFPS). ☛

YOU CAN FINALLY GET THROUGH!

After many years of ringing phones, eternal busy signals, and angry and frustrated outpatients, the Naval Hospital, National Naval Medical Center, Bethesda, Md., has completely renovated its outpatient appointment system.

Now, outpatients need only call one number to make appointments at 29 different clinics in the Hospital. Previously, each clinic had its own separate appointment listing.

The new number, 657-1610, is a central appointment service number with 15 lines, and is set up on a rotary hold basis. The first five lines are answered and the last ten put on hold with a recording. After the 15th call, callers receive the busy signal.

Several clinics have retained their own numbers for appointments, however. The Enlisted Psychiatric Clinic, 295-0017; the Officer and Dependent Psychiatric Clinic, 295-0053; the Electroencephalography Clinic, 295-0175; and the Pediatric Acute Care Clinic, 295-1160, are some of the clinics that have retained original numbers.

It is hoped that the new system will eliminate much of the confusion and frustration of the old system.—PAO, Naval Hospital, NNMCM, Bethesda, Md. ☛

HONORS TO CAPT BOND, MC, USN

CAPT George F. Bond, MC, USN, administrator and leading researcher of the Man-in-the-Sea Program, and international authority on medical and physiological aspects of deep ocean diving, was today honored for his scientific achievements by the Undersea Medical Society. In presenting the ALBERT R. BEHNKE, JR. AWARD for 1971 to Dr. Bond at the Society's annual meeting in Houston, Texas, Dr. H. R. Schreiner, President, cited Dr. Bond as a man of vision and foresight, with a unique quality of leadership. While serving in his capacity as principle investigator for the Navy's man-in-the-sea program, he provided the guidance which saw divers successfully reach a depth of 1,025 feet in a wet pot; truly the first beyond 1,000 feet. In the field of submarine escape, CAPT Bond and his team were the first to demonstrate the feasibility of escape from a disabled submarine at depths greater than 300 feet. He is responsible for the early use and adoption of the continuous ascent decompression schedules, the use of no-decompression excursion dives from ocean floor habitats, and the utilization of multiple teams to provide a continuous seabed effort.

In 1953, Dr. Bond entered active naval service as a Diving and Submarine Medical Officer, serving as Squadron Medical Officer from 1954 to 1958 and as Officer-in-Charge of the Naval Medical Research Laboratory at New London, Conn., from 1958-1964.

In 1957 he began the GENESIS I project, which studied the effects of prolonged pressure on humans. This work earned CAPT Bond recognition from the Secretary of the Navy and the unofficial sobriquet of "Father of SEALAB" and "Papa Topside," the latter bestowed by the SEALAB Aquanauts. The GENESIS project, proving that man could be safely subjected to pressure and experimental gases over prolonged periods, resulted in the establishment of the Man-in-the-Sea Program as a part of the Deep Submergence Systems Project in 1964. During the next two years (1964-1966), CAPT Bond acted as the Senior Medical Officer and principle investigator for the SEALAB I and SEALAB II experiments. CAPT Bond was decorated with the Navy Commendation Medal for heroic, professional and scientific achievement while serving as Submarine Squadron One Medical Officer from 1954-1956. In 1960 he was awarded the Legion of Merit, third highest peacetime award.

CAPT Bond was educated at the University of Florida where he received his Bachelor and Master of Arts Degree in 1939, and at McGill University in Canada where he received his degree of Medicine and also Master of Surgery in 1945. Following internship



CAPT G.F. Bond, MC, USN

at Memorial Hospital in Charlotte, N.C., he established a rural general practice where he was the sole physician for the 6,000 people in the mountain area.

Currently, CAPT Bond is attached to the Naval Ship Research and Development Laboratory in Panama City, Fla. as Special Assistant to the Commanding Officer of Diving Medicine. His primary duty is medical advisor for the Ocean Submergence Facility which is presently under construction at NAVSHIPRANDLAB. This facility is researching development, testing and evaluation of equipment and systems involving man working in deep undersea environments which promises to be the most advanced high pressure diving simulation facility in the world. Dr. Bond has also been involved in development of a University Center in Panama City. One of the first courses administered was the scientist in the sea program, which again, is a first of its kind.

In receiving the BEHNKE Award from the Undersea Medical Society, CAPT Bond will also receive an honorarium of \$1,000 sponsored by Ocean Systems, Inc., an affiliate of Union Carbide Corporation and the Singer Company. The award was established in 1969 to recognize outstanding achievements in the science of manned undersea activity and its first recipient was the man for whom it is named, Dr. Albert R. Behnke, Jr.

The Undersea Medical Society was founded on 10

April 1967 in Washington, D.C. to aid the advancement of undersea medicine and its supporting sciences. One of its prime functions is the development of channels of scientific communications among all researchers dedicated to the safe penetration of the oceans by man. The Undersea Medical Society, recognizing the broad communality of interests among aerospace and hydro-space physicians and physiologists, is affiliated with the Aerospace Medical Association.—CAPT Earl H. Ninow, MC, USN, President-Elect Undersea Medical Society; Naval Safety Center, NAS, Norfolk, Va. 🇺🇸

HONORS TO CDR SCRIMSHAW, MSC, USN

The Paul Bert Award was established by the Aerospace Physiologist Section of the Aerospace Medical Association, for outstanding proficiency in Operational Aerospace Physiology. Paul Bert, a 19th century French physiologist is regarded by many as the father of aviation medicine.

CDR Paul W. Scrimshaw, MSC, USN, Head, Aerospace Physiology Training Branch, Aerospace Medicine Operations Division, Bureau of Medicine and Surgery, was the recipient of the 1971 Paul Bert Operations Award. The award was presented during the annual meeting of the Aerospace Physiology Section of the Aerospace Medical Association held at the Shamrock Hilton, Houston, Texas on 27 April 1971. It was awarded in recognition of CDR Scrimshaw's expertise in the field of operational aerospace physiology.



CDR P.W. Scrimshaw, MSC, USN 🇺🇸

AMA SECTION COUNCIL ON MILITARY MEDICINE

CAPT Roger Stevenson, MC, USN, Head of Medical Department, U.S. Naval Academy, Annapolis, Md., and CAPT Wendell A. Johnson, MC, USN, Director Naval Reserve Division, BUMED Code 36, members of the AMA Section Council on Military Medicine, were unanimously elected to serve two year terms in office beginning Jan. 1, 1972. CAPT Stevenson will serve as Chairman of the Section Council on Military Medicine. CAPT Johnson will serve as Secretary to the Section Council.

The direct involvement of the national specialty societies in the formation of the AMA Section Councils gives these societies direct access to the AMA policy-making machinery. Resolutions which address themselves to problems of a particular specialty or to problems of general concern to the medical profession can originate within the Council or within the Section Business meeting and may be forwarded by any delegate to the House of Delegates for consideration. Motions can also be addressed to the AMA Board of Trustees when there is a need for action at a time apart from a regularly scheduled meeting of the House.

An interesting program is being offered by the Section on Military Medicine at Convention Hall on Tuesday, June 22, 1971, Atlantic City, N.J. See you at the Annual AMA Convention! 🍀

COMPUTERIZED SHOTS "UNFORGETTABLE"

Starting soon at the Naval Air Facility at Naha, Okinawa, a mechanized brain will remind every Navyman when he is in need of immunizations. The new system will not only lessen the chances of error in recording shots, but will make it more convenient for a Navyman to keep his immunizations up to date.

The system involves utilization of a UNIVAC computer acquired late last year by the Data Processing Division. Although the idea of using a computer to program shots isn't new, it has never been fully developed, according to one of the project's innovators, Senior Chief Hospital Corpsman Ed Brown.

Developed jointly by Mr. Keith Wellman and Mr. Gerald Scott of Data Processing, the program in its final form will automatically send a card to each man when he needs an immunization. In time, this will be extended to include reminders of necessary physical examinations and hearing tests.

At present, however, the computer is supplying the Medical Department with a printed list of which shots are needed by every individual in the command and in

Fleet Composite Squadron Five, which maintains headquarters at NAF, Naha. During the transition period, every man must report to the Medical office to find if he is in need of immunizations.

One of the benefits of the system will be the elimination of discrepancies that usually exist between a Navyman's personal shot record and his health record. Through use of the computer, the faults of manual record-keeping procedures will be eliminated, saving time as well.

However, the system is basically a convenience. Its success depends on every person reporting promptly for his shots when he receives his reminder.

In addition to Chief Brown, other members of the medical staff who aided in developing the computerized shot system are Hospital Corpsmen First Class Donald Patton and John Lynch.—PAO, U.S. Navy Fleet Activities, Ryukyus - NAF, Naha, Okinawa. 🍀

CERTIFICATION OF SANITARIANS

CAPT Gordon W. Werner, MSC, USN
CAPT William K. Lawlor, MSC, USN
CAPT Leon P. Eisman, MSC, USN
CAPT Louis R. Kaufman, MSC, USN
LCDR Elmer Eugene Jenkins, MSC, USN

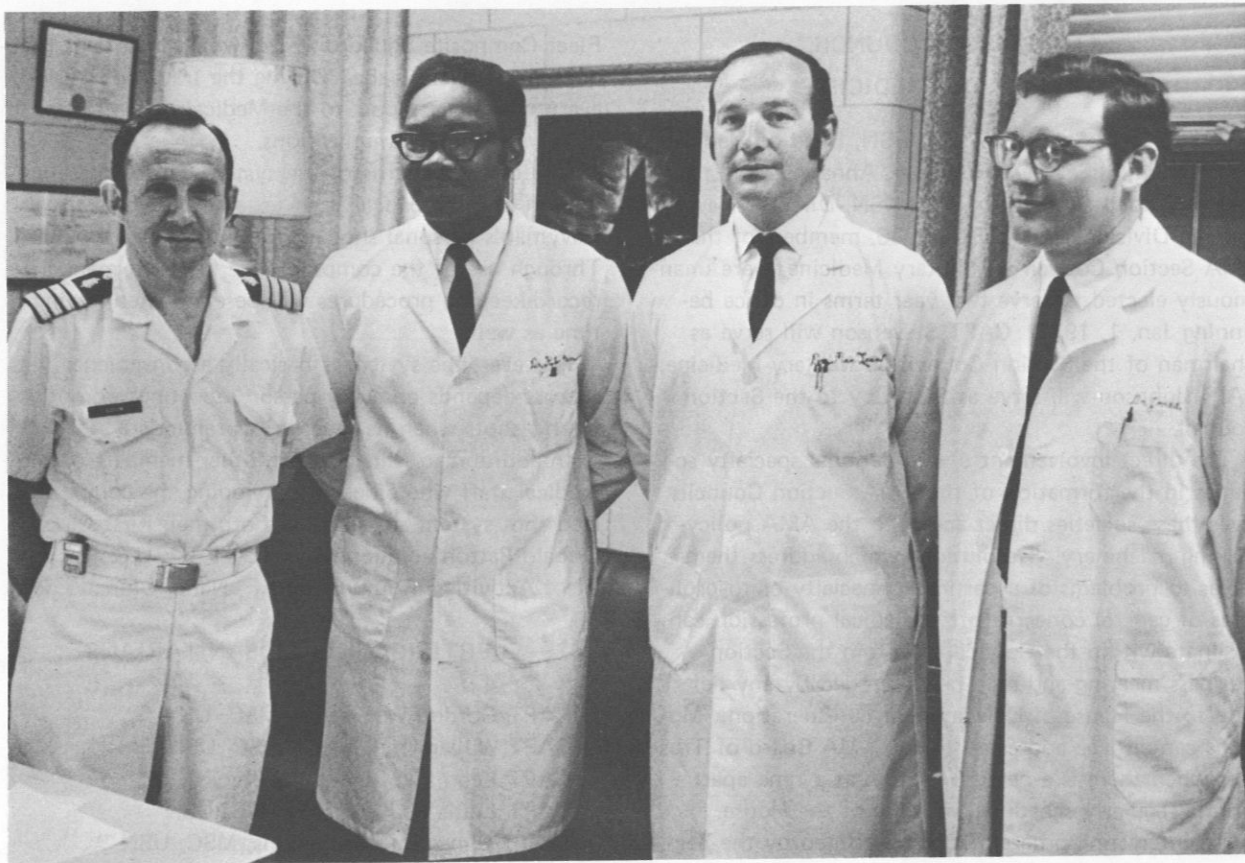
The 1971 issue of the "WHO IS WHO PROFESSIONAL REGISTER" of the American Intersociety Academy for the Certification of Sanitarians, Inc., includes the above named Navy Medical Department officers as having been nationally certified as "Sanitarians," together with a biographical description.

Certification by the Academy affords recognition of high achievement and marked distinction resulting from educational preparation, experience and competent practice in the profession. The primary purpose of the Academy is to improve man's environmental health status through the improvement of the practice of the professional environmental sanitarian.—Preventive Medicine Division, BUMED Code 72. 🍀

LCDR'S ROBERTSON AND

MACLEAN SCORE FIRST'S

At the Fourth Annual Conference of The Washington Urological Residents on 23 April 1971 in the Auditorium, Basic Science Building, Georgetown University Medical School, Washington, D.C., LCDR Nathaniel R. Robertson, MC, USN and LCDR Thomas A. MacLean, Urology Service, Naval Hospital, Bethesda, Md., each won first prize in competition for original papers. The six teaching hospitals in the Metropolitan



CAPT Mitchell Edson, MC, USN (left), Director of Naval Hospital Urology Training Program and Chief of Urology, NNMC, is pleased with the fine showing made by his staff. They stand, from left to right: LCDR Nathaniel R. Robertson, MC, USN; LCDR Thomas A. MacLean, MC, USN, and; LCDR L. Jones, MC, USN.

Washington area were represented. LCDR Robertson delivered his paper, "Pre- and Postoperative Chemotherapy of Testis Tumors" at the Scientific Session and LCDR MacLean presented his illustrated case study, "Calculus Anuria" at the Pyelogram Session.

These two awards each represent a first for the Navy

Urology Service, according to CAPT Mitchell Edson, MC, USN, Director of the Naval Hospital Urology Training Program, National Naval Medical Center, Bethesda, Md.

It was a successful and rewarding meeting for Navy medicine in general and Navy Urology in particular.

NOW STAFF – FORMER STUDENT

On 15 April 1971, LTJG Larry L. Reiter, NC, USNR, reported to Naval Hospital Corps School, San Diego, Calif., as the first male nurse faculty member.

In February 1963, LTJG Reiter graduated from the same Hospital Corps School and was transferred to Naval Hospital, Oakland, Calif., where he was assigned to Patient Care. In June 1964, he reported to Naval Hospital, San Diego, for a course of instruction in Clinical Laboratory Assistants School. After completion of this course of instruction, he was assigned to duty at the Dispensary, Lake Mead Base, Las Vegas, Nev.

In 1965, LTJG Reiter applied and was selected for the Navy Enlisted Nursing Education Program (NENEP). He graduated from the University of Colorado in June 1969. Having been commissioned on the day of graduation, he underwent four weeks of indoctrination at Newport, R.I., and subsequently reported to Naval Hospital Great Lakes, Ill. for duty.

After 19 months at Great Lakes, LTJG Reiter received orders to duty in Vietnam, but when the billet was deleted, he was assigned to the staff at Hospital Corps School, San Diego.

LTJG Reiter expressed his enthusiasm for the educational opportunities afforded within the Navy. He explained that the Navy Enlisted Nursing Education



CAPT R.E. Hunter, MSC, USN (left), Executive Officer, HCS, San Diego, Calif., and CAPT A.T. Butler, NC, USN (right), Chief Nursing Branch, HCS, welcomed LTJG Larry L. Reiter, NC, USNR (center), the first male nurse faculty member.

Program is concerned with the further education of outstanding members of the Hospital Corps who can earn a Bachelor of Science Degree in Nursing. LTJG Reiter urges all Hospital Corpsmen who meet the

requirements of BUPERS Instruction 1120.37A to give serious consideration to a career in Nursing.—HMCM J.D. Johnson, Administrative Assistant, Naval Hospital Corps School, San Diego, Calif. ☸

IN MEMORY OF HOSPITAL CORPSMAN WILHELM

Wilhelm Hall, named in honor of the late Navy Hospital Corpsman Mack Wilhelm, was officially dedicated at ceremonies held on May 13th at the Naval Air Station, Corpus Christi, Tex. Mack's parents, Mr. and Mrs. Paul Wilhelm of Maywood, N.J., unveiled the inscribed name on the building.

The program opened with a welcome from CAPT Robert Coleman, NAS Executive Officer, and the rendition of the National Anthem by the Naval Air Advanced Training Band. Following the introductions made by CAPT Richard Sampson, Commanding Officer of NAS, and CAPT Howard Baker, Commanding Officer of the Naval Hospital, CAPT Robert Walsh, Medical Officer of the Eighth Naval District addressed

the audience. "I have never seen a poor corpsman," he said, "although some are better than others."

Hospital Corpsman Wilhelm served with Company D, First Battalion, Ninth Marine Regiment, Third Marine Division in the Republic of Vietnam. On February 19, 1969, his company came under heavy enemy attack. While under fire, Wilhelm rushed to the aid of a seriously wounded marine. He administered first aid and carried the victim to a sheltered area. Although wounded himself in the leg and shoulder, Wilhelm returned to the aid of another marine who had been hit. In the process of assisting the latter victim, Wilhelm was mortally wounded by a burst of enemy rifle fire. He was posthumously awarded the Navy Cross for heroism.



Mr. and Mrs. Paul Wilhelm of Maywood, N.J., unveil the inscription on Wilhelm Hall, dedicated at the Naval Air Station, Corpus Christi, on May 13, 1971. Standing with backs to camera, left to right, are: CAPT R. Sampson, CO, NAS Corpus Christi; CAPT R. Walsh, MC, USN, and; CAPT H. Baker, MC, USN, CO Naval Hospital, Corpus Christi. (Photo by PH3 Smotherman).

Wilhelm Hall was opened last summer to accommodate victims of Hurricane Celia. Two months later, the enlisted personnel were allowed to move in. The barracks can accommodate over 125 personnel. Central air conditioning, carpets, lounge area and modern shower facilities are among the comforts provided by the new residence.—JO3 Mike Chartier, PAO, NAS, Corpus Christi, Tex. ☘

✠ In Memoriam ✠

CAPT Arra B. Chesser, MC, USN, (Ret.) died 14 April 1971 at the Naval Hospital, Bethesda, Md. He was born 10 Nov 1899 in Waldron, Ind. CAPT Chesser earned his B.S. degree and his M.D. degree at Indiana University in 1922 and 1924, respectively. His active naval service began in June 1924 and he was designated a Flight Surgeon in 1931. During his early naval career, CAPT Chesser served aboard several U.S. Navy ships — USS Mercy, USS Arkansas, USS Niagra, USS Lexington, and USS Saratoga. From Dec 1940 to Apr

1945, CAPT Chesser was Asst. Chief, Division of Aviation, BUMED. From Nov 1946 to Aug 1947 Dr. Chesser was the Executive Officer, Naval Hospital Camp Lejeune, N.C., and he later served as Force Medical Officer, Staff, Commander Naval Forces Western Pacific. CAPT Chesser was entitled to the WW I and WW II Victory medals. He had retired in July 1958. He is survived by his wife, Madeline, and one daughter, Christine.

CAPT John E. Goebel, MC, USN, died 27 April 1971 of metastatic carcinoma at the Naval Hospital Pensacola, Fla. He was born in New Orleans, La., on 26 June 1916. CAPT Goebel received his B.S. degree from the Louisiana State University A&M College and his M.D. degree from Louisiana State University Medical School in 1943. He was appointed ENS, USNR, in July 1942, and Acting Assistant Surgeon, LTJG, USN, in March 1943. He subsequently served on continuous active duty until his death. In 1947 CAPT Goebel was designated a Flight Surgeon and served in that capacity at NAS Pensacola; NAAS Saufley Field, Pensacola; NAS Alameda, Calif.; and Air Transport Squadron SEVEN. He also served aboard the USS Sicily (CVE-118) and USS Saipan (CVL-48). In May 1968 he reported for duty at NAS Pensacola where he remained until his death. CAPT Goebel had earned the American Campaign Medal, the WW II Victory Medal and the Korean Service Medal. He is survived by his wife, Marjorie and two children, John and Nancy.

CAPT Clark G. Grazier, MC, USN (Ret.) died as a result of heart disease on 25 Mar 1971 at the Chestnut Hill Hospital, Philadelphia, Pa. He was born 24 Dec 1901, at Huntingdon Furnace, Pa. CAPT Grazier graduated from Penn State College in 1928 and received his M.D. degree from Jefferson Medical College, Philadelphia, in 1931. On 8 Jun 1931, he was commissioned LTJG, MC, USN, and began his naval internship on 27 Jun 1931. CAPT Grazier was serving as Medical Officer aboard the USS Panay, COMYANGPAT, when it was bombed and sunk by Japanese planes on 12 Dec 1937. In 1943-44 he was OinC of a Hospital Facility at Townsville, Queensland, Australia. During World War II he also served as Executive Officer of Base Hospitals located at Milne Bay, New Guinea and Hollandia, Dutch New Guinea. From Jul 1950 to Oct 1952, CAPT Grazier was Head, Medical Corps Branch, BUMED. He was awarded the Navy Cross and earned many campaign and service medals. CAPT Grazier's name was placed on the TDRL List on 1 Jul 1961, and on the Permanent

Retired List effective 1 May 1966. He is survived by his wife, Anne.

CAPT Edward C. Penick, DC, USN, died of leukemia 12 Apr 1971 at the Naval Hospital, Bethesda, Md. A native of Hopkinsville, Ky., he was born 14 Jun 1925. CAPT Penick earned his B.S. degree from Duke University and graduated from the University of Louisville School of Dentistry in 1950. He also completed a year of postgraduate training in endodontics at the University of Alabama in 1957. During more than 19 years of naval service, CAPT Penick became a specialist in endodontics, directed residency programs at the Naval Hospital Portsmouth, Va., and served as Head of the Endodontics Departments at the Naval Dental Clinic, Norfolk, Va., and at the Naval Dental School, Bethesda, Md. For the past two years, CAPT Penick had been Head of the Endodontics Department, Naval Dental School, Bethesda, where he directed the Residency Program in Endodontics for graduate dental officers. He was a Fellow of the American College of Dentists, a Diplomate of the American Board of Endodontics, a member of the American Dental Association, and an Honorary Fellow of the American Association of Endodontics. CAPT

Penick was a nationally known clinician in endodontics and served on the Editorial Board of the journal *Oral Surgery, Oral Medicine and Oral Pathology*. He was Chairman of the Association of Endodontists' Committee For Clinical Correlation Of Research and a member of the Education Committee. He is survived by his wife, Nellie; two children, Edward and Natalie, and; a sister.

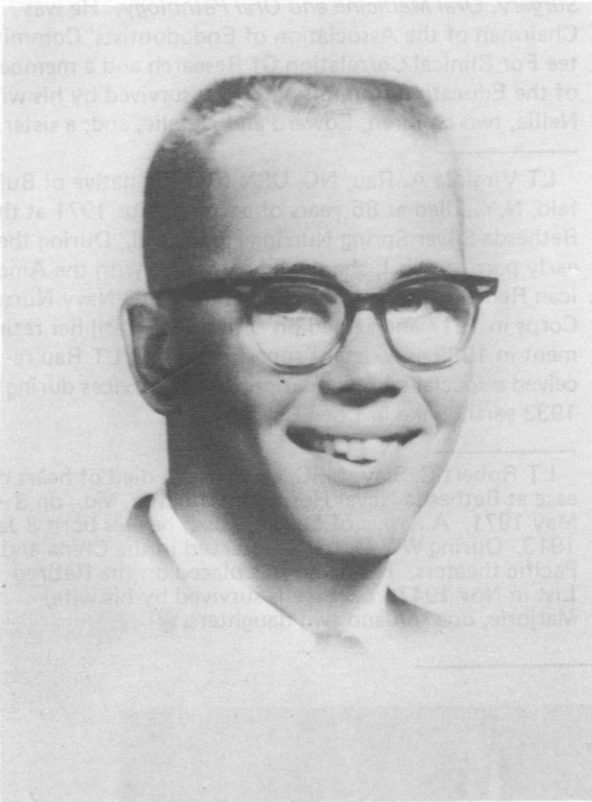
LT Virginia A. Rau, NC, USN (Ret.), a native of Buffalo, N.Y., died at 85 years of age on 5 Apr 1971 at the Bethesda-Silver Spring Nursing Home, Md. During the early part of WW I, she served as a nurse with the American Red Cross in Europe. She entered the Navy Nurse Corps in 1917 and served on active duty until her retirement in 1939 as assistant superintendent. LT Rau received a special commendation for her services during the 1933 earthquake in Long Beach, Calif.

LT Robert C. Slay, MSC, USN (Ret.) died of heart disease at Bethesda Naval Hospital, Bethesda, Md., on 3 May 1971. A native of Laurel, Miss., he was born 3 Jan 1913. During WW II, LT Slay served in the China and Pacific theaters. His name was placed on the Retired List in Nov 1947. LT Slay is survived by his wife, Marjorie, one son and two daughters. ☙



USAF Veterinary Corps Major Richard J. Brown of Eaton, Colo., and other researchers made an expedition to Navassa Island in the Caribbean, in connection with studies on animal diseases that may be transmitted to man. Sea and air transportation was provided by USS Detroit from Guantanamo Bay. The Commanding Officer of the ship gave Dr. Brown (center) a commemorative plaque for RADM Oscar Gray, Jr., MC, USN (left), Commanding Officer of the Naval Aerospace Medical Center. CAPT Newton W. Allebach, MC, USN (right), Officer-in-Charge, Naval Aerospace Medical Research Laboratory, attended the presentation of the memento to Admiral Gray.—PAO, Naval Aerospace Medical Center, Pensacola, Fla. ☙

RAMBUR HALL DEDICATION



Rambur Hall was constructed in 1969-71 as a Junior Bachelor Enlisted Quarters, authorized by Congress in the Military Construction Program, FY 1969. On 4 March, the dedication ceremony was held at the Naval Station, San Diego, Calif. General Leonard F. Chapman, Commandant of the Marine Corps, participated in the ceremony and unveiled the plaque. CAPT Ralph DiCori, USN, CO Naval Station, San Diego, delivered brief remarks and read the citation awarded posthumously to HM3 Michael J. Rambur, after whom the new 505-man structure was named.

The Rambur immediate family consisting of LCDR and Mrs. William M. Rambur, USN (Ret.) and their three surviving children were guests of honor. Following the dedication, Rambur Hall was officially opened by a ribbon cutting ceremony in which General Chapman and Mrs. W.M. Rambur participated. Other invited guests in attendance included: MGEN J. N. McLaughlin, USMC, Commanding General, Marine Corps Recruit Depot, San Diego; RADM H.D. Warden, MC, USN, CO Naval Hospital, San Diego; CAPT R.E. Hunter, MSC, USN, XO Naval Hospital Corps School, San Diego; CAPT E.F. Haase, MSC, USN, CO Field Medical Service School, Camp Pendleton; CAPT J.H.



Cutting ribbon ceremony. Standing from left to right: LCDR W.M. Rambur, USN (Ret.); Mrs. W.M. Rambur; GEN Chapman, Commandant of the Marine Corps, and; CAPT R. DiCori, USN, CO Naval Station, San Diego.



Rambur Hall BEQ

Stevens, Jr., USN, CO Service School Command, San Diego, and; COL R.W. Teller, USMC, CO Marine Barracks, Naval Station, San Diego.

HM3 Michael James Rambur, USN (dec.) was born on 25 Aug 1946, the eldest son of LCDR and Mrs. William M. Rambur, USN (Ret.). He graduated from Chula Vista's Hilltop High School, Calif., in June 1965, and enlisted in the Navy on 17 Oct 1966. He graduated from Hospital Corps School, Co. A67-67 on 15 June 1967, and from USMC Field Medical Service

School in July 1967. At a time when service with the Marine Corps was sure to involve duty with combat forces, Hospitalman Rambur had volunteered for field duty.

Hospitalman Third Class Rambur gave his life on the field of battle at Quang Nam on 24 November 1968, while attending to the needs of his wounded comrades, disregarding the intense enemy fire and his own serious wound. He was awarded posthumously the Bronze Star Medal.

BRONZE STAR CITATION

For heroic achievement on 24 November 1968 while serving as a corpsman with Company "H", Second Battalion, Seventh Marines, First Marine Division in connection with operations against enemy aggressor forces in the Republic of Vietnam. While participating in Operation MEADE RIVER in Quang Nam Province, Company "H" came under a heavy volume of small-arms and automatic-weapons fire from a North Vietnamese Army unit, and sustained several casualties. Courageously leaving his position of relative safety, Petty Officer (then Hospitalman) Rambur moved across the fire-swept terrain to aid the wounded men, and was treating their injuries when he was seriously wounded in the shoulder. Ignoring his painful injury, he steadfastly refused medical treatment and resolutely continued his determined efforts as he crawled from one casualty to another and instructed other Marines in caring for the injured men. After Petty Officer Rambur alertly observed that an adjacent platoon had also sustained several casualties, he disregarded the intense enemy sniper fire, and was crawling to their aid when he was mortally wounded. His valor, bold initiative, and selfless devotion to duty inspired all who observed him and were in keeping with the highest traditions of the United States Naval Service.

The Combat Distinguishing Device is authorized.

(We appreciate the assistance rendered by CDR C. C. Edwards, USN, and CAPT DiCori, in providing the photographs and related information concerning RAMBUR HALL.)



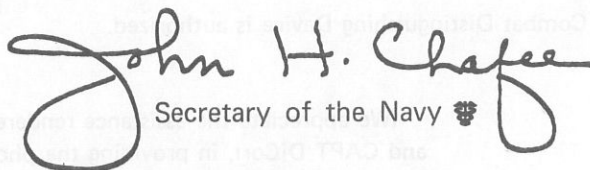
The Secretary of the Navy takes pleasure in presenting the
MERITORIOUS UNIT COMMENDATION to the

PREVENTIVE MEDICINE SECTION
FIRST MEDICAL BATTALION, FIRST MARINE DIVISION (REIN) FMF

for service as set forth in the following

CITATION:

For meritorious service in support of the First Marine Division during operations against enemy forces in the Republic of Vietnam from 20 January 1968 to 15 December 1968. The Preventive Medicine Section distinguished itself under the most trying conditions of combat environment by skillfully preserving the fighting strength of the First Marine Division. It systematically controlled and prevented outbreaks of communicable diseases. Section personnel conducted more than 500 extensive preventive medicine surveys, travelling in excess of 12,000 miles by roads which were frequently mined and ambushed. The Section's laboratory performed 4,000 bacteriological studies to assure the highest health standards. Approximately 46,000 mosquitoes were captured from 12 geographic locations and meticulously classified, and a dynamic malaria control program was established which helped reduce the malaria rate by nearly 75%. Through numerous other outstanding programs, the Preventive Medicine Section was able to provide the First Marine Division with excellent health care. By their indomitable spirit, exceptional professionalism, and inspiring devotion to duty, the officers and men of the First Marine Division Preventive Medicine Section upheld the highest traditions of the United States Naval Service.


Secretary of the Navy

United States Navy Medicine

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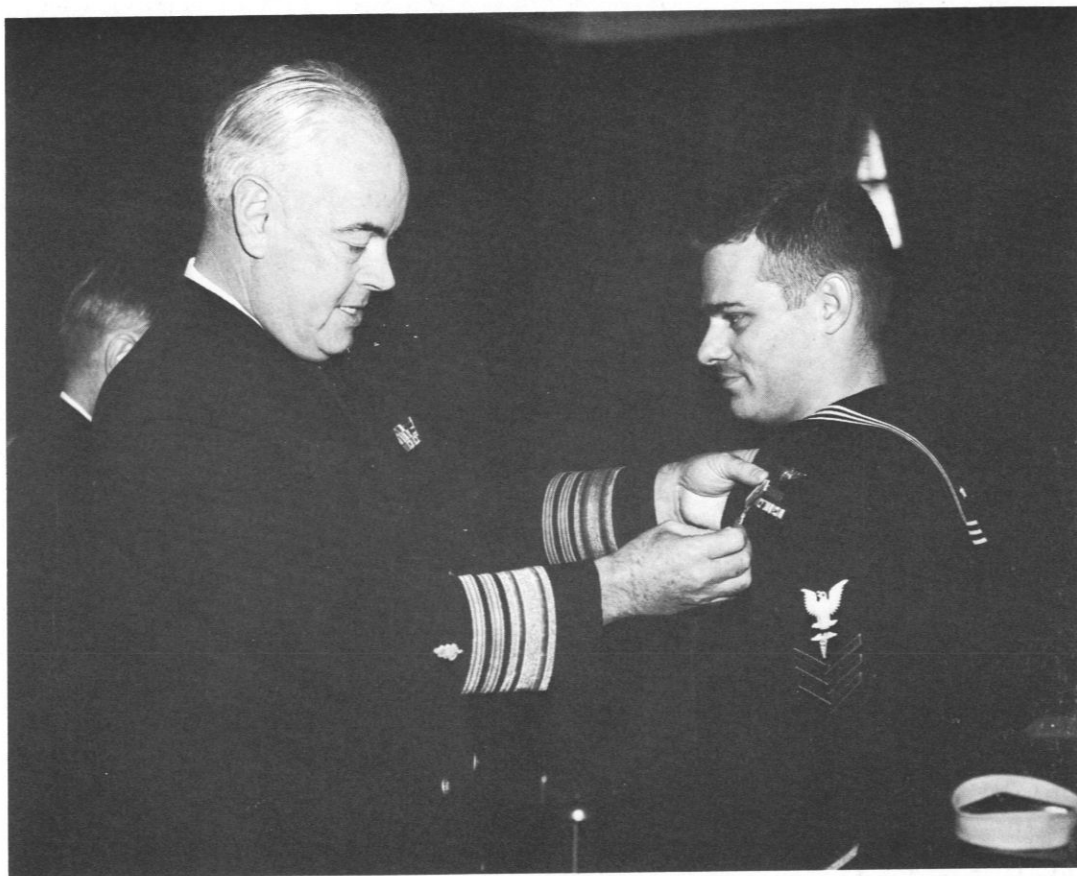
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